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The OIL WEEKLY

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LOOKING AHEAD
... with the Editor

THE broad problems of the origin of structures in which oil and gas are trapped are often overlooked. As a rule operators in an oil province are concerned with local problems and devote their time to an interpretation of the anomalies in the area of their activities. A better understanding of the forces which create the regional structural features, however, will assist in a more profitable evaluation of economic geology. Such understanding when applied properly in the local sense should materially assist in the sciences of geology and geophysics.

In lay language then, a study or understanding of the forces that cause the earth's crust to take shape, can be of great help in seeking to learn more about oil structures. All the processes by which the deformation of the earth's crust is brought about, producing continents, ocean basins, mountains, etc., are known as "diastrophism."

To present the theory of diastrophic movement, somewhat simplified, R. C. Tuttle, geologist with Sunray Oil Company, of Tulsa, Oklahoma, has performed an interesting experiment: By coating a rubber ball, placing it on the spindle of a hand-turned gear such as is used for a light emery wheel, revolving the ball at a high speed and grasping an arrangement to shorten the polar diameter and thereby making the sphere an oblate spheroid, illuminating results were observed in the cracking of the paraffin, or the results of certain forces. The experiment is discussed in Tuttle's article, "Theory of Diastrophic Movement," to appear soon.

THE OIL WEEKLY

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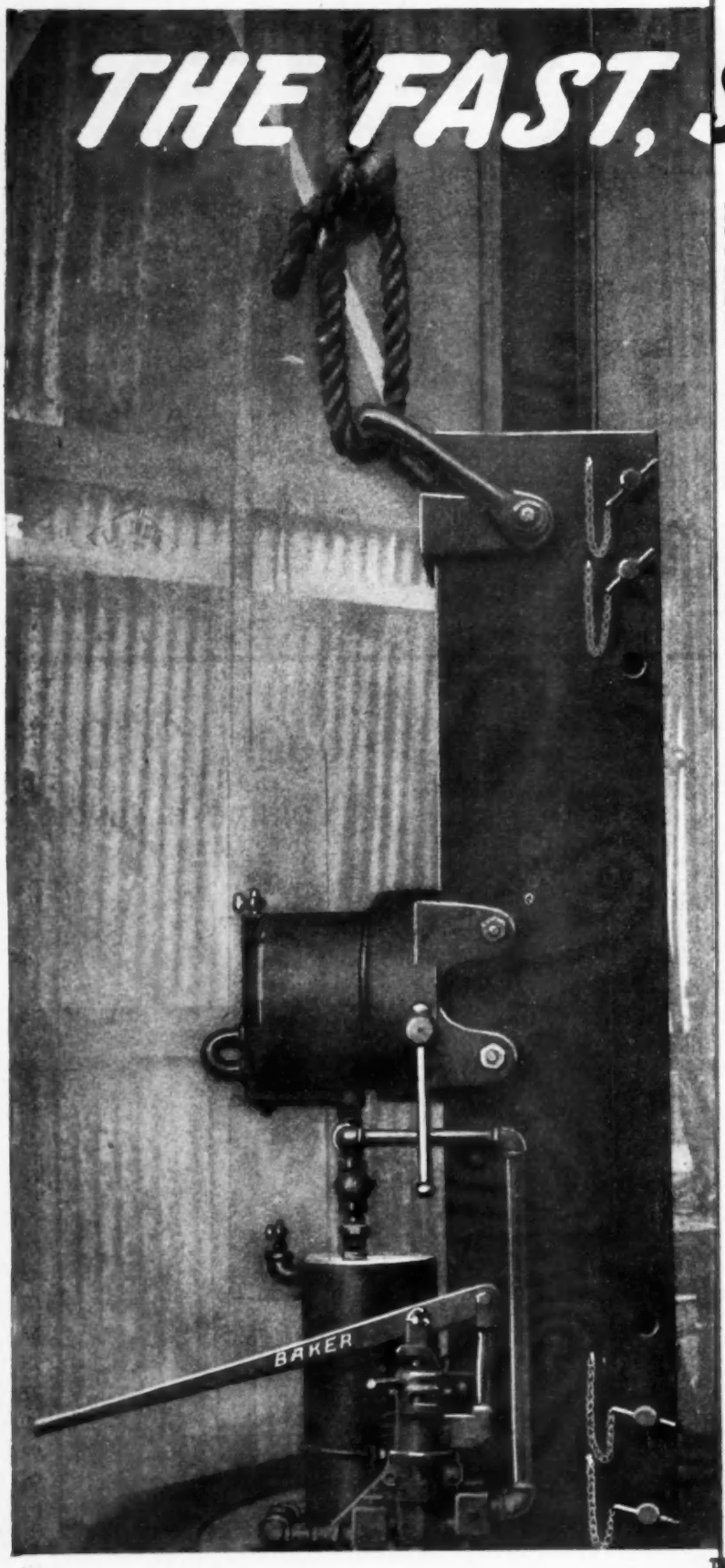
THE FAST, SAFE WAY



IT'S EASY TO STRAIGHTEN DRILL PIPE

DRILL COLLARS AND KELLY WHEN THEY HANG VERTICAL IN THE DERRICK

TO STRAIGHTEN BENT KELLYS, AND ALL TYPES OF PIPE, IS... WHILE THEY ARE SUSPENDED IN THE DERRICK

using a BAKER PORTABLE HYDRAULIC KELLY STRAIGHTENER

THIS highly efficient and easily operated device utilizes the principle of the hydraulic ram, applying the force built up by a manually operated pump to the bend in the Kelly, drill collar or drill pipe AS IT HANGS SUSPENDED IN THE DERRICK.

Probably more Kellys are bent during transportation, and in being laid down and picked up, than any other cause. Frequently a Kelly that has just been straightened in a shop will again be bent during the process of transporting it back to the well, rolling it off the truck, and dragging it into the rig.

EASY TO STRAIGHTEN IN THE DERRICK

When the Baker Kelly Straightener is used, the job is done RIGHT ON THE ROTARY TABLE with the Kelly hanging in its normal position. The hazards, the loss of time, and the expense of transporting and handling are entirely eliminated. In foreign or isolated fields the Baker Kelly Straightener is considered indispensable as the cost and loss of time in transporting a bent Kelly or drill pipe to and from a distant shop are serious matters.

An important feature of the Baker Hydraulic Kelly and Pipe Straightener is the fact that it is completely portable, the entire unit weighing only 1,200 pounds. It can be transported readily on a small pick up truck, or a trailer, and by means of the cat line is quickly set up on the rotary table ready for successful operation by following simple instructions.

Pressure sufficient to straighten 8¾" diameter Kellys or drill pipe can be built up without undue exertion, by manual operation of the hydraulic pump. It is safe to use, and the only parts subjected to wear are inexpensive and readily replaceable—the body and pump will last indefinitely.

Ask for details and prices on this efficient device which quickly pays for itself and then pays dividends for a long long time.

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PORTABLE HYDRAULIC STRAIGHTENER

The Changing Panorama

Gas Turbines for Ships Developed

THE first gas turbine ever built for ship propulsion was put through its paces at Jeannette, Pennsylvania, late in July. This is a development of great importance, for it marks a definite step forward in efforts to perfect a new type prime mover.

Work to date indicates that gas turbine power plants are practical. From the standpoint of price they are not yet competitive with other types of prime movers, but costs can be expected to decline in the future and because of simplicity many engineers think they ultimately will cost less than other prime movers, especially in large sizes. Undoubtedly the future will bring many further advances, and within a year we may know the answer to the effectiveness of gas turbines and whether their large scale production will be justified. This would create an enlarged market for low-grade fuel oils.

The new power unit tested at Jeannette was a joint undertaking of Elliott Company and United States Navy Bureau of Ships. Already additional plants have been designed for increased horsepower output, more effciency, less weight and more compactness. At least two of the new gas turbine plants will be completed in the next nine months.

One pound of the new atomic energy is said to be equivalent in heating value to 6000 barrels of fuel oil, but at current prices, the one pound costs as much as 30,000 barrels of fuel oil.

Pressure Maintenance Programs Valuable

THE financial benefit of recovering additional oil through adoption of reservoir pressure maintenance programs is demonstrated by Continental Oil Company's experience.

The mid-summer issue of *The Red Triangle*, Continental's house organ, states:

"This operation has had tremendous profit possibilities to this company when it is considered that it re-energizes latent quantities of oil remaining underground, only requiring some force to bring it to the surface. This is what is termed 'underground pressure maintenance,' and it is estimated that the areas in which Continental has found it possible to utilize this method of extended recovery will eventually enrich our coffers by at least 56 million barrels of crude oil which on present markets has a value of 70 million dollars, or if you wish to go a step further—pressure maintenance on its own means approximately $14.50 a share of issued stock."

Work Wanted

"POSITIONS Wanted by Ex-Service Men," a new classification that is appearing weekly on the Trading Post page of THE OIL WEEKLY (see page 95) is one that should not be overlooked by oil company executives or personnel men alert for competent workers.

Through its Pony Edition, sent free each month to some 6500 former oil men now in the service, THE OIL WEEKLY has offered its columns toward bringing men and jobs together. The ads, as they appear from week to week on the Trading Post page, are submitted by soldiers and sailors and others who are anxious to line up work as soon as they can get their discharges. Some are after jobs right now, other discharge dates are indefinite.

The qualifications are varied, of course. Many are obviously highly-trained oil industry technicians; several are former roughnecks who are anxious to get back on the derrick floor as soon as they can shed Uncle Sam's uniforms. Every one received thus far is characterized by an earnestness of purpose and augurs well for the employer who effects a connection.

No charge is being made for publishing the ads. THE OIL WEEKLY's only hope is that the plan will be of real service both to ex-service men and the industry itself.

No Time for Changes In PAW Executives

NOW would be a highly dangerous time to make any changes in the executive heads of PAW and undoubtedly it is not the wish of the majority of oil men. Particularly would this be true if the change were made merely to appoint a Texan because "Texas produces approximately 50 percent of the crude oil used by this nation," as advocated by the Dallas Clearing House Association. Nothing could more quickly make a political football of the oil agency.

There have been times when the decisions and actions of PAW have seemed unreasonable, but it is widely admitted PAW has done an excellent job as a whole. Credit for its accomplishments is usually attributed to the fact it is one of the few agencies to be staffed by men from its own industry, and that the men selected have had no desire to "stay on."

Many of the able men now with PAW would make immediate departure if Ralph Davies should leave the agency. This would open the doors for political office seekers—who would want to stay beyond the duration of the war—because the war seems too near an end to expect others to accept appointment.

Reducing Airplane Weight With Helium

USE of helium instead of air for the first time to inflate large airplane tires is said to mark a new step in aviation progress. In announcing the new development, Goodyear Tire & Rubber Company technicians said it will reduce military plane weight thereby automatically increasing range and useful loads. Postwar, it will do the same for commercial ships, adding to passenger and freight revenues of the major airlines.

Chief objection to the use of helium, that of its rapid diffusion through rubber, has been overcome by the use of Butyl rubber tubes. Dual seal tubes are also satisfactory for the use of helium.

A 110-inch tire requires 92 pounds of air for inflation. Only 13 pounds of helium will inflate the same tire. Weight saved on each tire is 79 pounds, a total of 158 pounds for the two main wheels on each plane, plus the weight saved by using helium in the plane's nose wheel.

Goodyear officials estimate that each pound of weight saved in commercial transport operation is worth $100 per pound annually in added passenger and freight revenues.

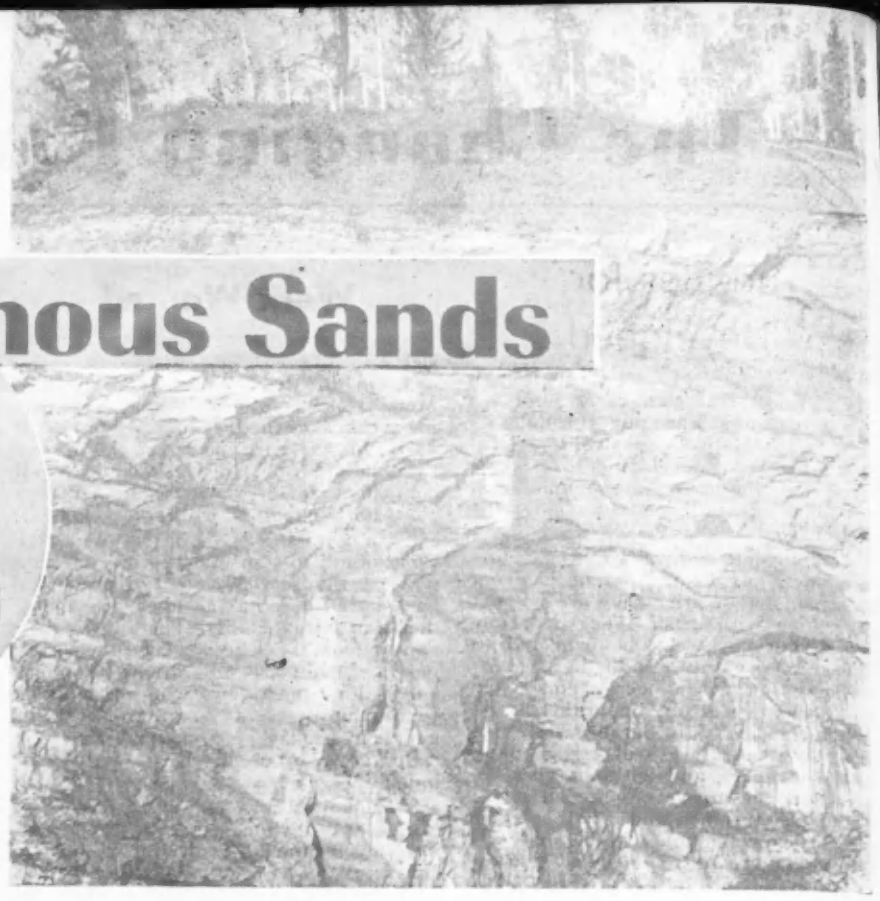
This principle of multiple-ownership, exemplified in the corporation, is the characteristic form of free enterprise in America. It enables a large number of people to pool a lot of money and distribute their losses as well as their gains. This is the way the American industry has found more oil than all the rest of the world combined.

—B. I. GRAVES, vice president,
Tide Water Associated
Oil Company.

FPC Denies It Has Any Axes to Grind

UBLIC denial that the Federal Power Commission has any "axes to grind or preconceived ends to serve" in the forthcoming natural gas hearings is encouraging. Likewise encouraging is Chairman Basil Manly's assertion that the commission has no desire to extend its jurisdiction to cover the production of natural gas or oil. It is to be hoped the statement is true.

However, if true the investigation will be an innovation, indeed. The oil industry is perhaps the most investigated, reviewed, surveyed and studied enterprise in the United States, certainly from the standpoint of government. To what purpose and what good, the industry wonders.



Close view of bituminous sand exposure

Bituminous Sands of Alberta

By K. A. CLARK
Research Engineer
Research Council of
Alberta, Canada

ARE the bituminous sands of Alberta on the way to being subdued and harnessed to industrial use or will they prove elusive, still, and continue to tease? The outcome of the test programs of the Canadian federal and provincial governments to determine the cost of producing oil by excavating bituminous sand from areas of low overburden and by recovering the oil from the sand by the water-washing general method of separation, should give the answer. If this cost turns out to be substantially less than the value of the oil as a crude, commercial development should follow. But if it turns out to be more, the scientists and promoters will have to put up with the continued stare of the bituminous sands from their cliffs with what grace they can manage while they work out a new line of attack.

The Bituminous Sand Area

The bituminous sand deposit of Alberta occurs in the northern part of the province in the region of the Athabaska River. The extent of the deposit is not known with any certainty, as it is burned under some hundreds of feet of overburden and only a few exploratory holes have been drilled. However, the Athabaska River and its tributaries have cut their valleys through the covering and into the bituminous beds. Exposures along these rivers reveal a minimum extent of 1000 square miles. The total extent is probably many times greater than this minimum area.[1,2] The thickness of the deposits, along the Athabaska River is about 200 feet.

The part of the bituminous area that is of practical significance at the present time lies from McMurray northward along the Athabaska River for 65 miles. McMurray, or more accurately, Waterways, which is three miles distance from it, is the terminus of the line of the Northern Alberta Railway which runs east of north from Edmonton for 300 miles. River transportation by shallow-draft boats extends from Waterways northward through the bituminous sand area and on the the Arctic. The McMurray airport is the first landing field for Canadian Pacific Airlines planes flying from Edmonton to the various points of importance along the great waterways formed by the Athabaska, Slave and Mackenzie rivers and Athabaska, Great Slave and Great Bear Lakes.

A few years ago, one could say with some degree of truthfulness that he had been "down north" if he had been to McMurray. Today one goes to McMurray to start to go north. Northern development has left it far behind. There is the radium, uranium and silver mining on Great Bear Lake, the oilfield near Norman Wells on the Mackenzie River (of Canol Project fame) and the growing gold mining camp of Yellowknife on Great Slave Lake to mention only the outstanding examples of industrialization extending for 1000 miles beyond McMurray. Yet it would be wrong to give the impression that McMurray was now in the midst of civilization. The most northerly supply center is Edmonton and the Northern Alberta Railway to Waterways runs one train a week.

The bituminous sand deposit is made up of beds of unconsolidated sand, silt and clay more or less impregnated with a very viscous asphaltic oil. The sand beds are apparently the result of sedimentation under deltaic conditons, for they show much cross-bedding and lensing. Generally, the mechanical grading of the sand can be adequately expressed in terms of the 50-mesh size and smaller. The percentage of material finer than 200-mesh varies from a few percent to high percentages. Silt and clay occur as sand constituents, also as thin partings and as prominent beds. Close interbedding of sand, silt and clay is common. The oil content of the bituminous sand varies, mainly, with variations of silt and clay content. As a very general rule, a sand becomes silty or clayey in nature as the content of material passing the 200-mesh sieve exceeds 20 percent and the oil content becomes low while the water content rises. Bituminous sand, as mined and containing less than 20 percent of fine material, generally has an oil content of from 10 to 17 percent of oil by weight and a water content of from two to eight percent.[3,4,5]

The sand particles of the mineral aggregate of bituminous sand consist mainly of quartz. But as much as 5 percent of these particles may be of such minerals as mica, rutile, ilmenite, tourmaline, zircon, spinel, garnet and pyrite. Lignitic material is of common occurrence in parting planes. Large fossilized tree trunks have been found embedded in the bituminous sand beds.[6]

Clay and sand cemented by pyrite into very hard, heavy, flattish or rounded stones or nodules occur. They are a feature of serious practical significance at some locations and are absent at others.

Bitumen Content

The bitumen content of the bituminous sands is a viscous, asphaltic oil displaying considerable variation in properties. Its specific gravity at 25° C./25° C. ranges from 1.005 to 1.025. At ordinary temperature the lighter oils pour somewhat readily while the heavier ones can barely be said to pour. The content of 100-penetration asphalt, ranges, roughly, from 65 to 80 percent.[3,7] The lighter hydrocarbons present correspond, in volatility, to the heavy end of gasoline. There probably is never more than 1 or 2 percent of such hydrocarbons in the lighter crude oils and practically none

at all in the heaviest ones. The sulphur content of the crude oil is 4 to 5 percent.[5,6,8] The crude is very susceptible to thermal decomposition, cracking being appreciable at 650° F. The products of simple refining of the crude are a few percent of a high sulphur gasoline together with diesel oil, fuel oil and asphalt.

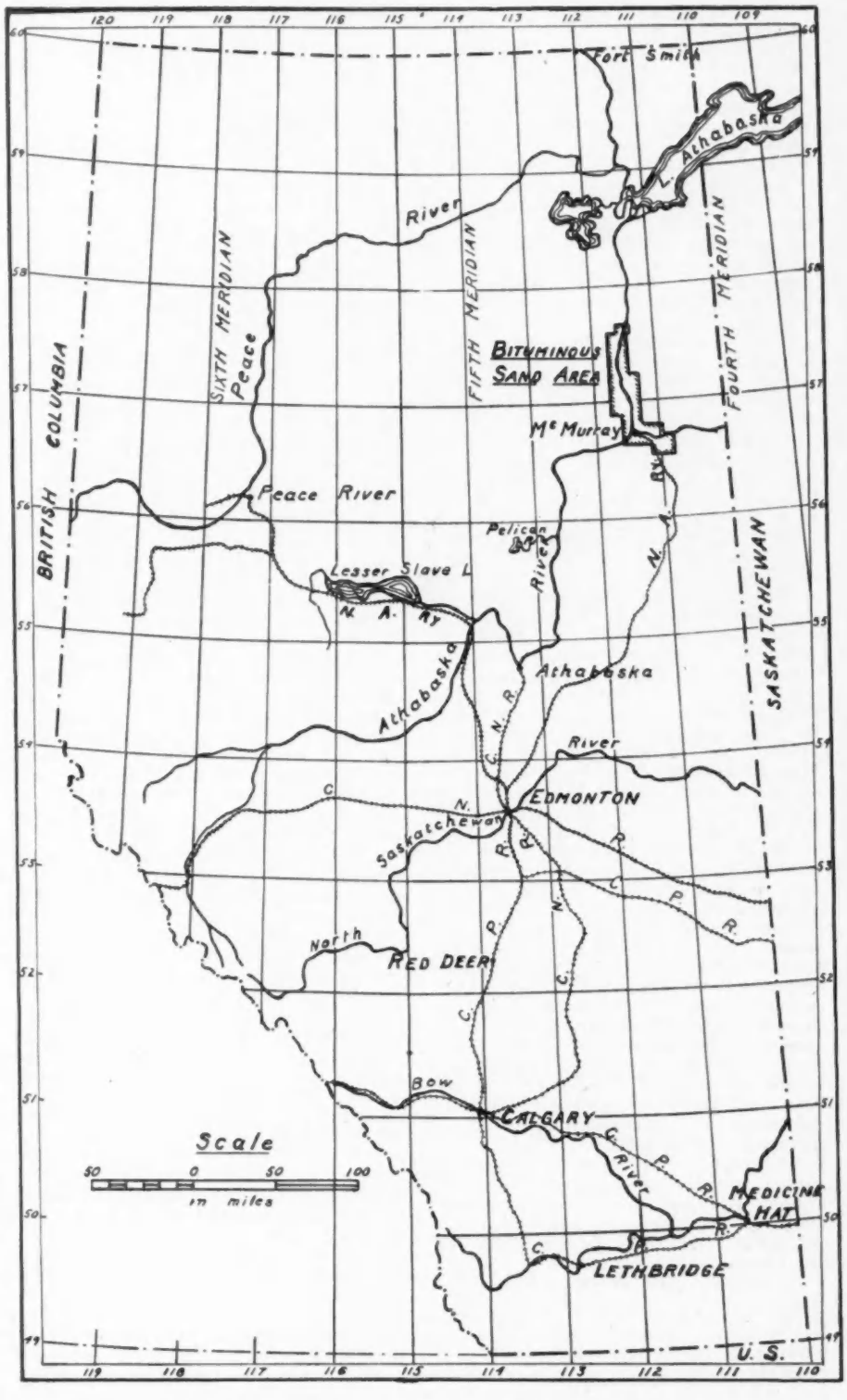
Bituminous sand in its natural state of packing weights about 120 pounds per cubic foot. Its coefficient of thermal conductivity is of the order of 0.003 in centimeter-gram-seconds units. The specific heat of the mineral aggregate is 0.18 calories per gram while that of the oil is 0.35. The calorific value of the oil is 17,900 British thermal units per pound.[8]

As long as present ideas of developing the bituminus sand by open-cut mining hold, the only parts of the bituminous deposits that are of significance are those lying under light overburden. So far as is known such sites are confined to river flats along the Athabaska and tributary rivers. In such places, the heavy overburned and at least some of the bituminous beds have been removed by erosion. Whether the remaining beds are of good grade is another matter. From the description of the bituminous sands which has been given it is plain that they are not characterized by uniformity. There are many cutbanks along the rivers which can be examined but the nature of most of the bituminous sand under favorable overburden conditions can be ascertained only by coring. Little work of this sort has been done. The federal government is in the process of examining several promising areas by detailed coring programs. Other promising areas are known. It seems probable that suitable exploration would uncover very large tonnages of good material along the 65 miles of the Athabaska River valley and adjoining valleys below McMurray which have been cut into the bituminous formation.[2]

The bituminous sand beds are of Lower Cretaceous age. They lie unconformably on Devonian limestone and are overlain by Cretaceous shales and sandstones. The shales and sandstones can be observed in place above the bituminous sand in exposures along the Athabaska River upstream from McMurray. Practically nothing can be seen of them below McMurray. There, the sands are covered by loose drift. Geological data about the bituminous and associated formations have been contributed, mainly, by two members of the Geological Survey of Canada. R. G. McConnell made the first serious study in 1888.[9] F. H. McLearn reviewed the geology of the region in 1917 and worked out the stratigraphical relationships.[10]

Several theories have been advanced to explain the origin of the oil in the bituminous sands. McConnell believed that it came from the underlying Devonian limestone but subsequent evidence has given no support to this view McLearn suggested the overlying black, Cretaceous marine shales as the source of the oil. J. C. Sproule, after studying the degree of impregnation of the bituminous sands throughout the formation, and noting the configuration of the limits of this impregnation, concluded that the oil entered the formation at a point lying northwest of McMurray between the Athabaska and Peace Rivers.[11]

Any theory of migration of the oil into the sands is faced with the difficulty that the oil in the bituminous sands is very viscous. McConnell met the difficulty by assuming that the oil now present is the residue of an original fluid oil, the light fractions having escaped by evaporation from the numerous exposures and loosely covered areas. It followed from this assumption that something approaching the original fluid oil would be found in that part of the formation south of McMurray which is well covered by shales and sandstones. On McConnell's recommendation, several wells were drilled in this area and one of them, at Pelican Rapids on the Athabaska River 75 miles southwest of McMurray reached the bituminous sands at 740 feet. The formation was found to contain the same sort of viscous oil as present in the neighborhood of exposures. But also, a heavy gas flow was encountered. The high gas pressure along with reduction in the diameter of the hole to 3⅝ inches forced the abandonment of drilling at 837 feet.[12] This operation took place in 1897-8. It gave no support to the assumption that the original oil which entered the sands was a fluid one. It was natural that the theory



Map of the province of Alberta showing location of the bituminous sands areas in relation to the principal centers of population.

of "in situ" origin[13] should be turned to as the answer to the difficulty about migration of the viscous oil but positve evidence in favor of this explanation is hard to produce. Hume met the difficulty by suggesting that the shoreline of the delta in which the sands were deposited could have been a fairly close-by source for the oil.[14] Apparently he reasoned that if too long a migration for the viscous oil was not postulated, the migration was possible, since movement of the viscous oil in the sand does take place. For instance, it settles by gravity into the lower part of sand lenses resting on impervious partings leaving the upper part unsaturated.

The bituminous sands have never lacked for people to answer their challenge of "come and get it." The Geological Survey of Canada made the first move toward commercial development by carrying out its drilling program at Pelican Rapids and elsewhere. Since then there has been a succession of attempts to get the oil from the sand in a practical way.

The drilling at the Pelican Rapids well was followed by more drilling into and through the bituminous sands at points scattered along the Athabaska River to the northern limits of the formation. In some cases the hope was to produce oil from the bituminous sands and in others to find the original oil in the limestone below. The most useful result of this drilling was the finding of salt in the Devonian limestone at the mouth of Horse River, about a mile south of McMurray. Several test holes drilled by the Government of Alberta during 1921-2-3 showed that the salt beds extended under the valley of the Clearwater River at McMurray and eastward. The Dominion Tar and Chemical Company, Ltd., is now operating a salt plant at Waterways.[15]

Since the oil will not flow from the sands into a bore-hole under the influence of naturally existing forces, various attempts have been made to assist it to enter. The method of assistance has been to heat the bituminous beds. High pressure steam has been used to make the oil fluid. Very high temperatures produced by electric heaters and by fires at the bottom of the hole have been tried with the intention of distilling the oil out of the sand and up the hole as vapors. All these attempts have been in defiance of nature, which has endowed the bituminous sand with very poor heat conductivity. For this reason, if for no others, the attempts have not been rewarded by success.

Ells' Work

The federal Department of Mines and Resources continued its interest in the bituminous sands and their commercial possibilities by assigning S. C. Ells to their study in 1913. The Athabaska River country was still inaccessible then. Ells got out that autumn by tracking his canoe up 95 miles of the Athabaska River's swift current and rapids to the navigable water leading to Athabaska Landing. Last autumn he flew out. Of his work accomplished during the intervening years, some outstanding items are his survey of the bituminous area culminating in a complete series of topographical maps on which all exposures of bituminous sand are shown;[16] his various practical demonstrations of the possibilities of bituminous sand, as such, as the basis for bituminous pavement aggregates; and his pioneering of the examination of bituminous sand areas holding promise for development by means of borings.

The use of bituminous sand as such in pavement aggregate is worthy of further comment. Since the oil in the sands is so obviously asphaltic, an association between these sands and bituminous highway construction has always been dominant in thinking about their utilization. One of Ells' very first projects was the bringing of about 60 tons of bituminous sand by sleigh to Athabaska Landing (there was no Northern Alberta Railway then) and on to Edmonton and the mixing and heating of this material with appropriate additions of sand and crushed rock to make several grades of bituminous aggregate for city pavement.[16] This work was made part of a standard sheet asphalt job under way in Edmonton. The bituminous sand section of the pavement is still in service and is hardly distinguishable from the standard surface laid at the same time. In 1926-7, Ells laid another stretch of bituminous sand pavement between the station and The Lodge at Jasper Park, Alberta.[17] These projects proved beyond question that the asphalt produced by driving off the lighter constituents of the bituminous sand oil is a good highway construction material. Thos. Draper of the McMurray Asphaltum and Oil Company attempted to commercialize the use of the bituminous sand for pavement construction. He opened a quarry alongside the railway near its terminus at Waterways, shipped sand to the Edmonton district and actively promoted its use. However, the business did not thrive. The bituminous sand was not a cheap material after being quarried, shipped 300 miles and quarried a second time from the railway cars. Its sand constitutent was too fine-grained, its asphalt constituent was too soft, and the proportion of sand to asphalt was not right. It needed too much "fixing up" to make pavement aggregate and pavement engineers could see no sound reason for changing from standard practice in order to use it.

The Research Council of Alberta was established in 1919 to conduct scientific work in aid of the development of the natural resources of the province. Study of the bituminous sand resource was on its first program and was continued for 10 years. The Council practically disappeared in 1932 due to the depression and was not reestablished until 1943. Bituminous sand studies were then reopened and are going on actively at the present time. The Council judged, at the outset, that the key to successful development of the bituminous sands was a practical method for winning the oil from the sands at the deposit. Once separated from the sands, the oil could be processed into marketable products by known refining technique. It judged further that the most feasible way in sight for winning the oil was to excavate the bituminous sand from favorable sites and to wash the oil from it with hot water. The Council took as its field of endeavor the study of the hot water separation process, or more specifically, the study of the factors involved in the process which affect its efficiency. It has prosecuted the study both in the laboratory and in larger scale work. In 1929-30 it built and operated a separation plant near Waterways. This was a cooperative effort with the federal Department of Mines and Resources, the federal partner taking responsibility for mining and for the use of the separated oil in paving experiments.[18]

Abasand Oils Ltd. had its beginnings around 1929, centering about three men from Denver, Colorado. These were B. O. Jones, Max W. Ball and J. M. McClave. Ball was consultant for the group while McClave, his patents and his previous experience with extracting oil from oil sands, contributed the technical background for the project. McClave had worked with bituminous sands occurring in the western States and had become acquainted with the Alberta sands through Ells. His method of separation was one of washing the oil sands with hot water in a mineral flotation cell and with certain reagent additions. Ball got in touch with the Research Council of Alberta in 1929 and he and McClave visited the Council's experimental plant near Waterways in 1930. He made arrangements for taking over this plant for his group but the depression upset this plan. Instead, McClave continued with laboratory scale work in Denver and later, in Toronto, Ontario. As a result of this work, the flotation cell was abandoned and what was termed the "Quiet Zone" cell was adopted. A. J. Smith of Kansas City, Missouri, joined the group to study the refining of the separated oil. A method of clearing the crude separated oil of its high content of water, sand and fine mineral matter in preparation for charging to a refinery was developed. It consisted, simply, of cutting the crude oil with approximately an equal volume of a light oil fraction of about the volatility of kerosene and then settling out water and mineral matter.

Plant Built

Abasand Oils Ltd. succeeded in interesting sufficient capital, principally Canadian, to commence the construction of a plant in 1936.[2] The plant was in the valley of Horse River about 1½ miles south of McMurray on a river flat which had been set aside as a bituminous sand reserve for the benefit of the National Parks. For various reasons the plant was not ready to operate until 1940. It then had to pioneer the problem of mining bituminous sand. An Eagle shale planer was tried and abandoned. Then a method of loosening the bituminous beds by light blasting and excavating by power shovel was developed satisfactorily. A fire destroyed much of the plant late in 1941 and the new plant was not ready for operation till late in 1942. To the end of 1942, the Abasand Oils' plant separated about 30,000 barrels of oil from bituminous sand and processed this oil into gasoline, "diluent" diesel oil, heavy fuel oil and asphalt residuum. The gasoline production was small and was consumed at the plant by trucks, power shovel and other gasoline-driven equipment. Diluent was returned to the separation plant for cutting the wet, sandy crude oil so that water and mineral matter would settle. The diesel oil was sold to the gold mining camps to the north. Fuel oil and asphaltic residuum were burned as fuel. Accumulations of residuum were coked in shell stills and the overhead was added to the stream to the refinery. The refinery, it should be added, was of simple design consisting essentially of a pipe still, "digester," and fractionating column.

It was at this stage of its history that Abasand Oils Ltd. became involved in the war situation. The Japanese threat was at its height. Because of it, the United States undertook the Alaska Highway and the Canol pipe line projects. A large military camp was estab-

High cliffs of bituminous sand along the Athabaska River. Underlying Devonian limestone shows at river level.

lished near McMurray as part of the latter project. In Canada there was grave concern about supplies of aviation gasoline and fuel oil in the western provinces. It appeared that the bituminous sands might have to be used as a source of these fuels if this was at all feasible. In preparation for this eventuality, the federal government, in 1942, started a program of exploration by drilling to prove up a site for a large scale separation plant. It also placed observers at the Abasand plant to collect data on which to base a judgment about whether the separation process and type of equipment of this plant would serve the purpose of a large, war emergency plant. Further, it arranged with Universal Oil Products Company for an investigation of the production of aviation gasoline and other products from the bituminous sand oil by modern refining methods. The judgment reached in regard to the separation plant was favorable, with reservations. In the meantime the Japanese threat had receded and the fuel situation had not become as critical as feared. The federal government might have dropped further consideration of the bituminous sands at this stage. Instead, it decided to continue interest, not so much because of the war situation as of the long view on oil reserves. It took over the Abasand plant early in 1943 for experimental operation to further develop the Abasand system of separation, to investigate other methods and to determine the cost of producing oil from bituminous sands. The separation plant was dismantled and rebuilt and the refinery was enlarged and improved. The systematic coring of promising areas along the Athabaska River was continued. Coring and analyses of core samples were in progress during 1944. Work at the separation plant proceeded without interruption until the recent $300,000 fire destroyed the 500-barrel-per-day capacity experimental separation plant, machine and pipe shops and other equipment. The refinery was saved.

Abasand will immediately replace the separation plant with a 1000-barrel capacity plant costing $350,000.

Ball, McClave and practically all other technical personnel of the former Abasand Oil Company dropped out soon after the plant was taken over by the government. Smith had gone some time before. Actual work at the plant is now being conducted by General Engineering Company of Canada.

Oil Sands Ltd.

Oil Sands Ltd. began about 1925 as the International Bitumen Company. It was organized by R. C. Fitzsimmons, who had acquired the lease of the former Alcan Oil Company. This latter company had an extensive lease in the northern section of the bituminous sand area about 60 miles down the Athabaska River from McMurray along the east bank. It had attempted to produce oil from the bituminous sands from wells. Fitzsimmons continued on the same idea for some years. There appears to be a pronounced trough in the surface of the Devonian limestone under the lease and the theory was that the oil in the bituminous beds was concentrated in this trough in such manner that it could be expected to flow into wells. The expectation was not realized to any useful degree. In 1930, which was the year the Research Council of Alberta was operating its experimental plant near Waterways, Fitzsimmons turned to excavating the bituminous sands and washing out the oil by hot water. His lease provided ample sand of good grade lying under light overburden. In the succeeding years he built up a small separation plant and refinery. A post office, named Bitumount, was opened at the plant camp. The problem of mining was simple at this site since the oil in the sands was distinctly more fluid than in the southern part of the area where Abasand Oils Ltd. is located, and did not cement the sand beds so firmly. A dragline dug the bituminous sand readily. Fitzsimmons put a very considerable tonnage through his plant during the years following 1930 and processed the separated oil into diesel fuel which was sold to the mining camps and asphalt which was taken to Edmonton and elsewhere. It was used in paint manufacture for roofing and some was shipped to Banff National Park for highway construction. However, financing was difficult. In 1942, the assets of International Bitumen Company were acquired by L. R. Champion of Montreal and the name of the company was changed to Oil Sands Ltd. Some improvements were made to the plant in 1943 and again in 1944 and it was operated for a month or so during each season.

Bituminous Sand Regulations

The granting of bituminous sand leases was in the hands of the federal government until 1930. When the Province of Alberta was established in 1905, the administration of its natural resources was retained by the Dominion of Canada and the newly created province was granted a yearly subsidy. At the time this was considered financially advantageous to Alberta. As time passed this view changed and possession of its resources was sought and obtained by the province.

The obtaining of a bituminous sand lease has been, and still is, a matter for negotiation between the lessee and the government concerned. There have been and there are now printed regulations but the leases that have been sought have been comparatively few and special circumstances seemed almost always to call for some departure from the regulations. The first leases to be granted were for 2000 acres adjacent to what was conceded to be a "successful" oil well. The lessee was allowed to acquire patent rights to his acreage, including both surface and minerals. Seven such leases were taken out and patented and they are still on the records. They are scattered along the Athabaska River from McMurray to Steepbank River. The next to be granted were oil and gas leases of a maximum of 1920 acres.

In 1920, the federal government delineated and withdrew from general leasing and homesteading all of the bituminous area with an overburden of 75 feet or less and required, for a lease of these lands, that the applicant give proof that he possessed a workable proc-

ess for extracting oil from the sands. At the same time several small but particularly favorable areas were set aside as reserves for the National Parks. One of these was in the valley of Horse River near McMurray. The maximum acreage of a lease was raised to 3840 acres as a result of negotiations between Ball of Abasand Oils Ltd. and the federal government starting in 1929. Ball argued that the larger lease was necessary for successful financing of a development. The resources were transferred to Alberta during these negotiations and Ball's final agreement with the province was for the acquiring of a 3840-acre lease.

The present printed regulations for bituminous sand leases[19] give the general requirements although, as mentioned, negotiations in a specific case are likely to result in deviations. Briefly sketched, they require that the applicant shall have the rights to a commercially-feasible process for recovering oil from the sands; that the applicant shall prove his process by pilot plant operations on a site put at his disposal for the test; that during the two-year period allowed for the pilot plant test, the applicant may prospect for the 3840 acres, in not more than eight blocks, which he wishes for his lease; that if the pilot plant test is judged successful, the applicant may proceed with the securing of his chosen acreage; that the lease is for 21 years, renewable, with annual rent at 50 cents per acre and a royalty of 5 cents per ton of bituminous sand mined or barrel of oil produced. There are safeguarding clauses regarding expenditures required in pilot plant and final plant operations, scale of operations and time allowed for completing the various stages of the project.

Provincial Government Separation Plant

The bituminous sands are now a resource of the Province of Alberta. It is Alberta, in the main, which will profit from their successful development and, conversely, which will suffer from a setback in prospects for bringing them into commercial productivity. It follows from this view that investigations in aid of development of the bituminous sands would be, primarily, a provincial matter. The province has, of course, sponsored studies of the sands for years through its Research Council. It was naturally pleased when circumstances led the federal government to undertake to produce oil from the bituminous sands as a war emergency measure in the first instance and then to continue the undertaking as a long view policy. It will profit from all advance in understanding of the problem that results from the federal work. However, the province decided that it was not wise to leave the matter entirely in federal hands and to commit the prospects for an early development of its resource to the outcome of the federal project. Dealing with bituminous sand is a complicated and tricky affair and one experimental plant project, especially when conducted by people with no bituminous sand background, might easily fail to achieve successful results. Two plants approaching the problem from the different viewpoints of their technical staffs and coping with the different conditions of two sites should yield much more useful information than only one. If both failed to obtain results indicating commercial feasibility, the failure would be more acceptable than if there were only one plant to fail and if both succeeded, the success would be checked and emphasized.

The Government of Alberta has authorized the building of an experimental separation plant and necessary refinery at a site which it has taken over from the lease of Oil Sands Ltd. This site is in the northern section of the bituminous sand area. The bituminous sands at this location contain a distinctly less viscous oil than those at the Abasand Oils Ltd. plant near McMurray. Also, it is down the Athabaska River where large scale development must be, if and when it takes place. The experimental plant will make use of the practical experience of Oil Sands Ltd. and the research and experimental plant experience of the Research Council of Alberta.

If bituminous sand is washed with hot water by almost any set of operations suitable for work on a practical scale, the oil is displaced to some degree from the sand and floats on the water as an oil froth. That is the hot-water separation process, described in a very general way. If the process is carried out without more understanding of it than indicated in the above statement, it is probable that the sand tailings will be oily and that the oil froth will have a high sand content. Efficiency depends on knowledge of factors which trend in the direction of causing the oil to leave the sand and to float as a sand-free froth and, conversely, of factors which trend in the opposite direction.

Isolating the important factors at work in the carrying out of the hot water separation process and evaluating them is not an easy matter. It is a task of making innumerable separation tests, observing the resultant effect of the factors involved, varying experimental conditions, following up leads and, out of it all, trying to figure out just what is going on. The task would be much easier if bituminous sand were constant in compositon instead of being quite variable. Variations in the content of silt and clay and in the characteristics of the oil have pronounced effects on the behavior of the bituminous sand when washed with hot water. Good progress is being made and some general ideas about how the process works are emerging.[20]

Several operations are required in carrying out the hot-water separation process. The first is the mixing and heating of the bituminous sand with water to form a pulp. The second involves introducing the pulp into a body of hot water under such conditions that the oil will float to the surface as a buoyant froth and the sand will sink. The oil froth and the sand tailings can be removed from the body of water, separated, by suitable means. A third operation must be performed, although it has little to do with the separation process. The high water content (up to 40 percent) and the sand and silt content of the oil froth must be eliminated by some method.

Pulping appears to be the key operation of the process. It is during pulping that the oil is displaced from the surfaces of the sand grains and if the displacement is complete, the way is clear for obtaining a high yield of separated oil as froth of low sand content. Incomplete displacement results in oil being retained by the tailings and in oily sand being lifted into the oil froth. Water tends to displace the oil from the silica sand particles but the tendency is markedly affected by conditons. Higher temperatures, mechanical mixing, and neutral to alkaline conditions[20] shorten the time required to do the displacing. Also, under any given conditions, the time for displacement can be markedly different for different bituminous sands. In some cases the displacement has already been accomplished when the sand is mined. When this is so, there seems to be a water film between the surfaces of the sand particles and the oil films surrounding them. Brushing the surface of such material strips the oil films from the sand and clean, white particles appear. But in other cases of freshly mined sand this film of water between oil and sand surface is not present. It is the function of the pulping operation to put it there and in some practicable length of time such as 15 minutes or less. The separation of the sand and oil by water seems to be the accompaniment of, if not the result of, the dispersal of water in the oil. As indicated already, the pulping operation is aided by use of alkaline reagents. It is probable that other reagents of special usefulness will be found. Calcium and magnesium hydroxides prevent the displacement of the oil.[21]

Excess of water should be avoided in the pulping operation. The water added should be completely absorbed by the pulp. When this condition is imposed, the oil at the end of a successful operation lies among the sand grains as small masses or flecks detached from the sand. If excess water is used, the oil flecks coalesce into clots enmeshing sand particles. This effect constitutes a premature collection of the oil. This collection should be left for a distinct operation in the process for which optimum conditions are created.

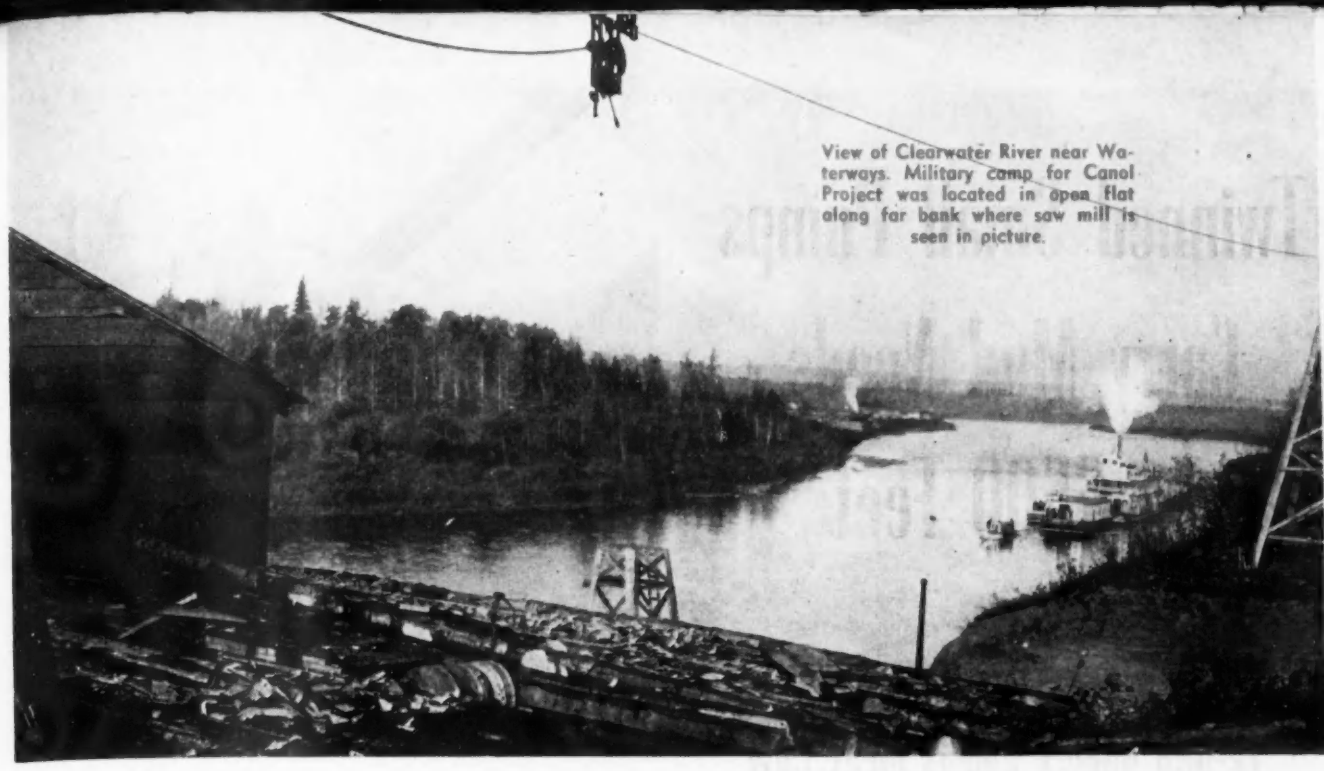
Introducing Pulp

The collection of the oil is accomplished in a large excess of hot water in which the oil sand particles are free to move away from each other, the oil rising to the surface to coalesce as a froth and the sand sinking as tailings. One effective way of introducing the pulp into the body of hot water is to feed it into a circulating stream just before it reenters the body of water. The stream disperses the pulp into separate particles of oil and sand which are free to move their independent ways.[20]

The formation of the buoyant oil froth requires comment. It is necessary that this froth be formed as otherwise the oil, being slightly heavier than water, would sink. The froth forms because of the strong tendency for air bubbles to become attached to the oil flecks. Very little air suffices to cause sufficient frothiness to float the oil and abundance of air should be avoided as the air bubbles become attached to and float sand as well as oil. In plant design, the matter of aeration must be under control within small limits or sandy oil froths will be produced.

At best, the oil froth recovered from the hot water separation plant is a crude product and must be cleaned up. It will contain from 25 to 40 percent water and at least 5 percent sand and other mineral matter. If the process is carried out poorly, ¼ of the weight of the froth may be due to mineral matter. The recovery of oil, as froth, can be 90 percent or better with bituminous sand not too high in silt and clay content and with good separation technique.

The elimination of water and mineral matter from the oil froth has been accomplished in two ways. There is the obvious one of evaporating the water.



View of Clearwater River near Waterways. Military camp for Canol Project was located in open flat along far bank where saw mill is seen in picture.

This way is complicated by the pronounced property of the wet oil to foam and it is extravagant of heat. The other way is to cut the oil froth with a light oil fraction. An amount equal to half the volume of the actual oil in the froth seems about the minimum requirement. The light oil, if things go right, breaks the water-in-oil suspension, reduces the specific gravity of the oil below that of water and reduces the viscosity so that both water and mineral matter will settle. The difficulty is that actually breaking the suspension is tricky and mineral matter does not settle into the water at the bottom of the settler cleanly; it drags down a heavy load of oil with it. This last feature makes it important to produce oil froths of low sand content in the hot-water separation operation. Settling the bulk of the water from the cut oil froth followed by dehydration by evaporation may be the best way through the clean-up problem

The 1930 experimental plant of the Research Council, and those of Oil Sands Ltd. and Abasand Oils Ltd. have all operated on the hot water separation principle. Abasand Oils Ltd. under federal government control has expressed the intention of experimenting with various processes.

No one who has travelled down the Athabaska River and has looked at the prodigious display of oil in cliff after cliff of bituminous sand along mile after mile of the bank for 65 miles down river from McMurray has doubted that this resource would, eventually, be the basis for commercial development.

Robert Bell of the Geological Survey of Canada had no doubt after his journey through the region in 1882 and wrote in his report of the fields of application for the oil. The inaccessibility of the country at that time was an obvious difficulty and Bell commented on the possibility of a pipe line to Hudson Bay. At intervals of about 10 years, since Bell's time, corresponding to the peaks of successive business cycles, those impressed by bituminous sand possibilites have found the money for a try at development. In the meantime, the country has opened up, railways have been built and economic conditons generally have been getting more favorable. The present war with its great drain on the oil resources of the continent has moved the economics of the situation a long way toward that which will make bituminous sand development profitable. Possibly the time that Bell and those who followed him felt sure would come, is about to arrive.

The crucial question now is, what is the cost of producing oil from the bituminous sands? The oil has a value as a crude which the oil industry can determine without great difficulty. It could, if it chose to do so, determine the cost of production. But this is a technical problem that would be novel to it and it is not likely to undertake the task except under an urge much greater than it yet feels. If, however, the cost is determined by those who are awaiting the development of their resource and the figure proves to be a favorable one, there should be no logical reason why the oil industry would not avail itself of a large, new reserve of oil.

The determination of the cost of producing oil involves the building of a plant which will perform all the operations from mining to simple refining and which will keep running for an extended period including the various seasons of the year. The building and operation of such a plant will prove that the technical problems of bituminous sand mining, handling and separation have been solved to a practical degree. Cost data from such a plant will have real meaning and will supply the basis for sound estimate of costs on full commercial scale. The federal government has a plant built, although it is not yet satisfied with its equipment or operation. The provincial government is in process of designing and building another rather different one.

The next chapter in the bituminous sand story will have to await the outcome of the two government plants. Possibly the scenery along the Athabaska River will continue for some years yet to look much as it always has since the coming of the fur traders. On the other hand some pretty wooded landscape may soon turn into sand dunes as a result of the unlocking of still another of nature's storehouses.

BIBLIOGRAPHY

[1] Allan, J. A., First Annual Report on the Mineral Resources of Alberta (1920).

[2] Ball, Max W., Development of the Athabaska Oil Sands. Can. Inst. Min. & Met. Trans., Vol. 44, pp. 58-91 (1941).

[3] Clark, K. A., and Blair, S. M., The Bituminous Sands of Alberta, Part I, Occurrence, Research Council of Alberta, Report 18 (1927).

[4] Ells, S. C., Experimental Drilling and Paving Operations. Investigations of Mineral Resources and the Mining Industry, 1927. Department of Mines, Ottawa.

[5] Ells, S. C., Core-drilling Bituminous Sands of Northern Alberta. Investigations of Mineral Resources and the Mining Industry, 1928. Department of Mines, Ottawa.

[6] Ells, S. C., Bituminous Sands of Alberta Operations During 1930. Investigations of Mineral Resources and the Mining Industry, 1930. Department of Mines, Ottawa.

[7] Swinnerton, A. A., Properties of Asphalt Made from Athabaska Bituminous Sands. Memorandum Series 88, Bureau of Mines and Geology Branch, Department of Mines and Resources, Ottawa (1944).

[8] Clark, K. A., Some Physical Properties of a Sample of Alberta Bituminous Sand. Can. J. Research F 22:174-180 (1944).

[9] McConnell, R. G., Report on a Portion of the District of Athabaska, Comprising the Country between Peace River and Athabaska River, North of Lesser Slave Lake. Geol. Surv. of Can., Vol. V, 1890-91, Sec. D.

[10] McLearn, F. H., Athabaska River Section. Geol. Surv. of Can., Summ. Rpt., (1916), p. 145.

[11] Sproule, J. C., Origin of McMurray Oil Sands, Alberta, Bull. Am. Ass'n. Petrol. Geol., Vol. 22, (1938), p. 1135.

[12] Experimental Boring in Northern Alberta. Geol. Surv. Can., Summ. Rpt., Vol. X, p. 18 A 1897: Vol. XI, p. 28 A, 1898.

[13] Ball, Max W., Athabaska Oil Sands: Apparent Example of Local Origin of Oil, Bull. Am. Ass'n. Petrol. Geol. 19 (1935) p. 153.

[14] Hume, G. S., Petroleum Geology of Canada. Economic Geology Series No. 14 (1944), Mines and Geol. Branch, Dept. Mines and Resources, Ottawa.

[15] Allan, J. A., Rock Salt Deposit at Waterways. Rept. No. 34, Pt. II, Research Council of Alberta (1943).

[16] Ells, S. C., Bituminous Sands of Northern Alberta. Rept. 632, Mines Branch, Dept. of Mines, Ottawa (1926). Maps accompany the report.

[17] Ells, S. C., Use of Alberta Bituminous Sands for Surfacing of Highways. Report 684, Mines Branch, Dept. of Mines (1927).

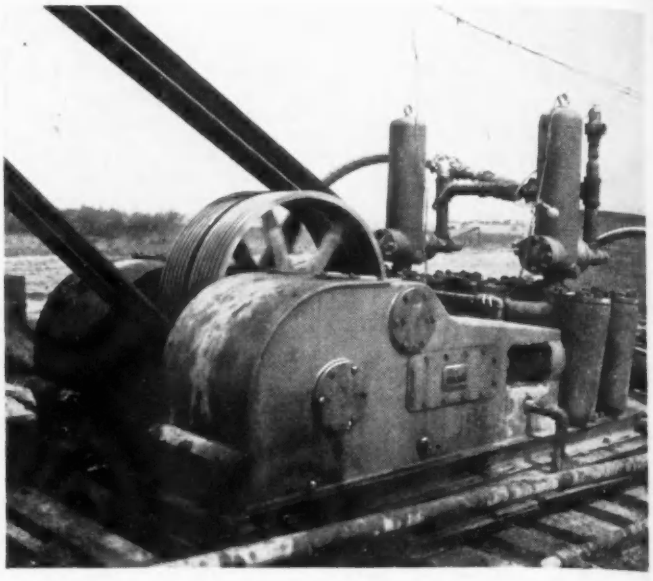
[18] Eleventh Annual Report of the Research Council of Alberta, (1930), p. 41.

[19] Regulations for the Disposal of Bituminous Sand Deposits, the Property of the Crown, in the Province of Alberta. O.C. 683-31, Govt. of the Province of Alberta, Dept. of Lands and Mines.

[20] Clark, K. A., Hot Water Separation of Alberta Bituminous Sand. Can. Inst. Min. & Met. Trans. XLVII (1944), pp. 257-274.

[21] Clark, K. A., and Pasternack, D. S., Hot Water Separation of Bitumen from Alberta Bituminous Sand. Ind. Eng. Chem. 24 (1932), p. 1410

Twinned Small Pumps Carry Mud Needs To 6500 Feet



The two pumps, each still on the skid with which it was equipped at the factory, are set side by side on a heavy sub-base and carefully aligned so that their two pinion shafts are in effect continuations of a single shaft on which the two 6-groove sheaves may be considered one 12-groove unit.

12-inch duplex pumps meet flow requirements for jackknife rig

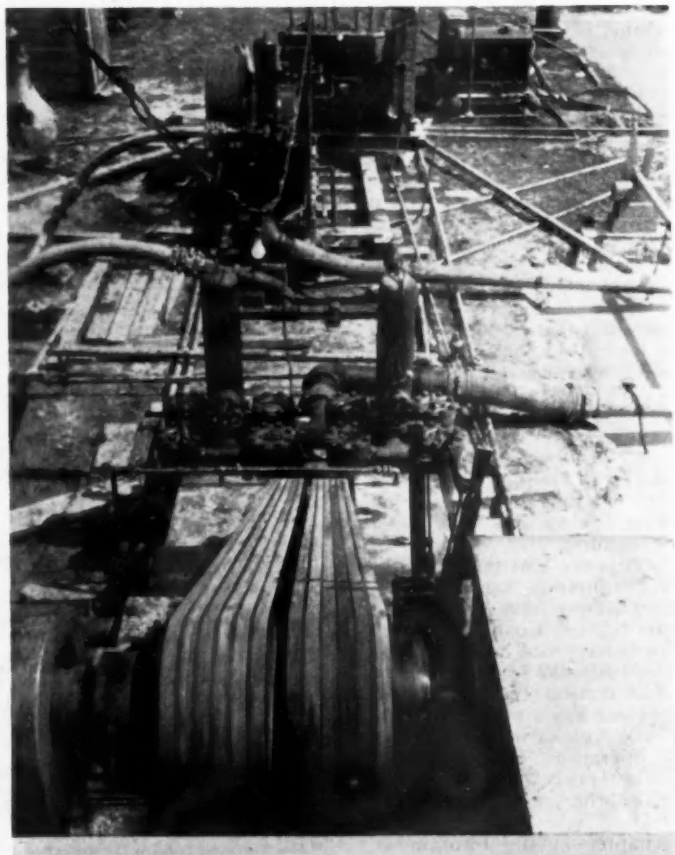
By ELTON STERRETT

WHEN it proved impossible to obtain a mud pump with rated capacity sufficient to meet anticipated demands for drilling to around 6500 feet in the Duboval field of Wharton County, Texas, Contractor J. A. Gray of Houston and his toolpusher, J. E. Boyd of El Campo, refused to sit back and wait until conditions or deliveries should improve to the point where the usual type of equipment could be delivered.

Instead, a heavy, welded sub-base was constructed of pipe and rolled iron sections, large enough to accommodate two duplex pumps, each of 12-inch stroke and equipped for V-belt power drive. The two pump skids were aligned carefully on this base, and provision made for rigidly fixing each in place. By reversing the pinion shaft in one of the pump drive units, the two V-belt sheaves were brought adjacent, instead of being separated by the width of one pump gear housing.

Then, after the pumps have been set on 45 degrees with respect to their crank throws—in effect making of the combination of a four-piston double-acting pump—a flexible coupling of the chain type was placed over sprockets set on the abutting ends of the two pump shafts, so that, once set for the desired stroke sequence, there could be no change. The chain and sprockets of the flexible unit did, however, provide sufficient lateral slack so that slight shift in alignment of the two pump shafts would not cramp either shaft in its bearings.

The V-belt drive, from the countershaft on the elevated platform on which were mounted the drilling engines, was the same as though to one wide pump sheave, except that grooves in the center of the driving sheave were left open to match the gap between edge grooves on the paired driven sheaves. Twelve D-section V-belts were ample to drive the combined unit, although at least four more would have been included in the drive had the two pumps been set up separately and driven independently.

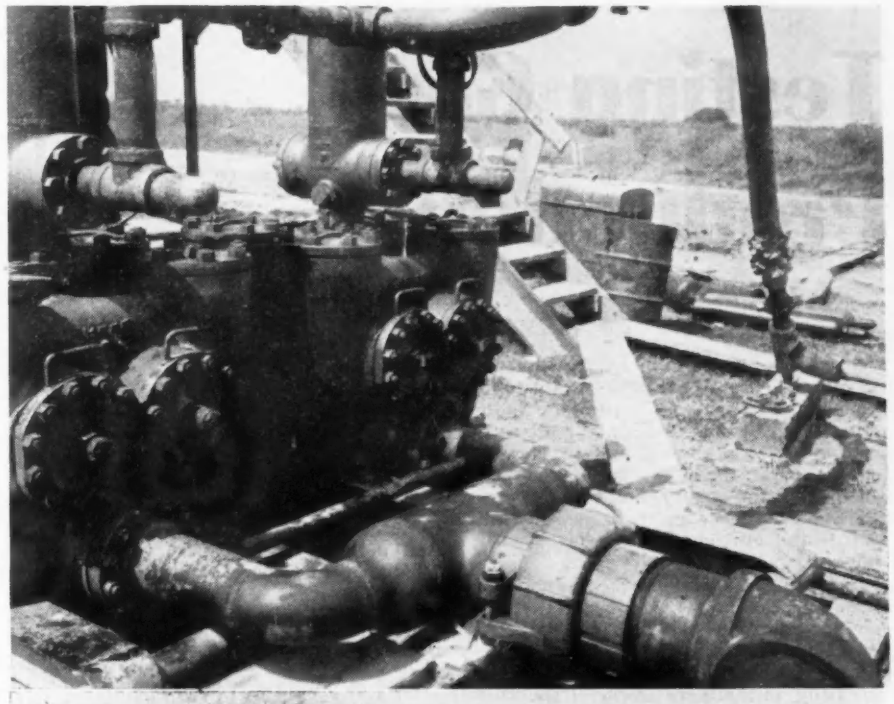


Looking down on the twinned pumps from the power platform of the rig. The "missing" belt on the drive sheave between the two sets of 6 belts is to provide the same clearance as that between the big sheaves mounted on the two pinion shaft stubs. From this vantage point, the drive appears as a single wide unit—which in effect it becomes once the two driven sheaves are unitized by flexible coupling.

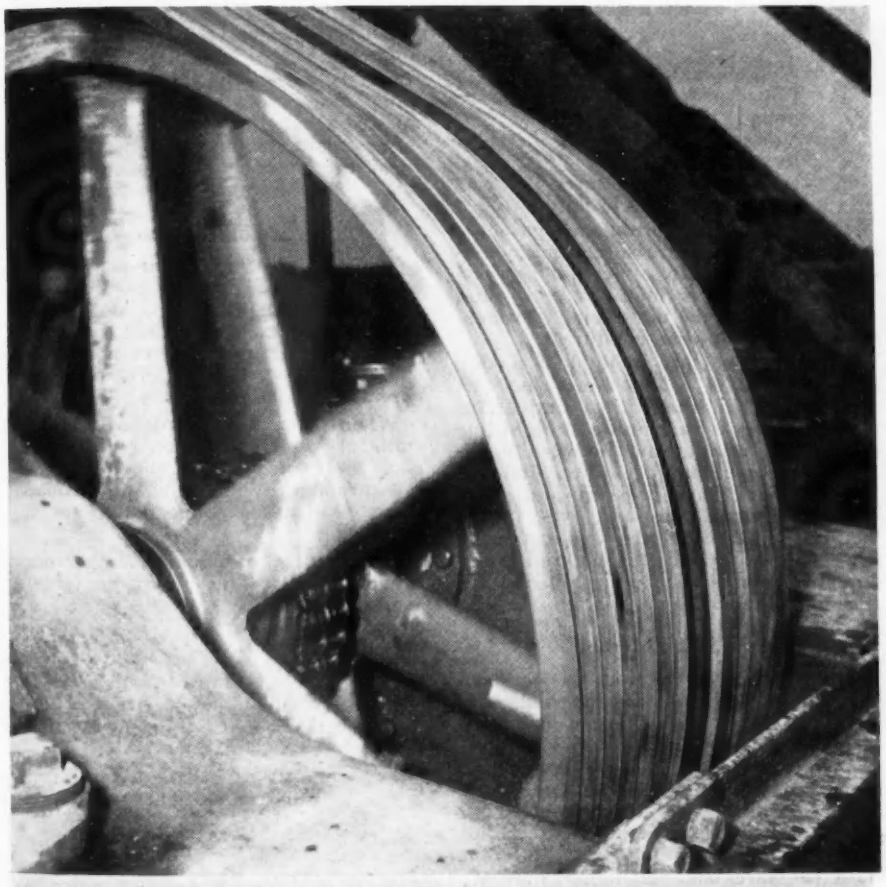
The twin pumps, instead of receiving mud through independent suction lines from the pits, are connected to a Siamese setup in which a single ten-inch suction line is brought from the pit, with the usual rubber section to absorb vibration between pit support and pump skid. The unit carries a 90-degree ell to facilitate alignment of pump with power units on the derrick, and a quick-acting bolt-type union. The latter fitting is made onto the branch of a swaged tee of the same diameter as the main suction line. Two swages, welded to the run ends of the tee, reduce the diameter to six inches, where a sweep ell and a short nipple completes the suction line to the intake flange at the base of the fluid end of each of the twin pumps. A 1½-inch steel bar, welded between the two suction nipples midway between the sweep ells and the flanges, absorbs any tendency of the manifold to flex, and limits stresses and vibration which otherwise might be transmitted to the welds in the manifold.

Support for the manifold is provided at the two flange connections, and again at a point between the hose section and the 90-degree ell in the ten-inch line. The Siamese connection itself is rigid, as is the pump mounting on the heavy sub-base, but the entire assembly is so designed as to prevent creep or vibration between component parts.

Pump discharge is through the usual outlets at the outboard ends of the castings carrying the air chambers, and is united in a single flow line with a swing and union which provide adjustment between tees to avoid side stress on the connections to the pump castings themselves. A sweep ell and long curved section of pipe take the elevated discharge and deliver it to the high-pressure line to the derrick.



The Siamese fitting which distributes the suction flow equally and without surges to the two intake headers. The welded fitting is reinforced by the steel bar visible between the two nipples carrying the flanges matching the inlets to the pump fluid ends; while the bolt-type union relieves the pump manifold of stresses set up in the main suction system.



Taken with the pump making 90 strokes per minute, this view shows the roller chain which couples the two shafts through the intermediary of paired sprockets, keyed to projecting stub ends of the pinion shafts on the units. The brace which prevents shifting of the gear housings is seen just to the right of the sheaves, being held in place with closely fitting bolts to reduce play in the connection.

While the rigidity of the sub-base on which the two pump skids are mounted is relied upon to maintain alignment of the paired units, and the mud suction Siamese fitting is braced as outlined, an additional safeguard against possible excessive change in alignment of the two sheave-carrying shafts is obtained through use of a 2 x 2 x ⅜-inch angle carried across above both gear case covers. This angle is bolted at each end to brackets of similar material, brazed to the pump gear housing castings.

Although data over long runs are not yet available, it is evident, from the reduction in number of V-belts required to power the unit, that power demand has been reduced—one estimate sets this gain as high as 40 percent—and a much more uniform flow of mud to the hole is obtained than would result were the two pumps run independently and their pressure peaks not blended as is done through the 45-degree setting of crank throws. The mud line is noticeably free of vibration, the various pump strokes not being readily distinguished by a hand on the pipe.

The skid-mounted twin pumps are handled as a single unit when moving to a new location, it being necessary only to break the unions in the suction and delivery lines, and to coil the V-belts atop the gear housings. To replace a V-belt, the chain flexible coupling is unshackled, and one of the sprocket halves is slid back onto its shaft to leave a gap through which the belt can be passed. Since the sprockets are keyed to their respective shafts, this operation does not jeopardize the previously established 45-degree setting of the crank throws.

Testing Gas Production

Industry is realizing that correct gas-oil ratio data is aid in increasing recovery

IT HAS been accepted by the industry for many years that in the majority of oil fields gas furnishes a primary motivating power for movement of oil from reservoir to well bores, and in varying degrees from them to the stock tank. But in all too many fields little consideration has been given to gas-oil ratio control and efficiency of reservoir withdrawals.

Fortunately, however, the industry is taking increasing cognizance of the fact that periodic gas-oil ratio test data, its correct interpretation and proper application of controlling methods, aid in increasing ultimate recovery. Especially in gas and air repressure projects is it known that gas-oil ratio or air-oil ratio control is an absolute economic necessity.

Measurement Methods

Whether for testing in primary or secondary production pools there are several methods commonly used for measurement of gas. Selection of the type to use depends on the accuracy required and producing characteristics of the wells to be tested.

Most common methods: 1. Pitot Tube; 2. Minute Pressure; 3. Back Pressure; 4. Side Static; 5. Orifice Meter; 6. Orifice Testers; 7. Recording Orifice Tester; 8. Positive Meter.

The Pitot tube method is a very popular method although limited in overall accuracy, since normally it is used as a snap test. Gas to be measured is passed through a test nipple at least eight diameters long. The nipple is inserted in the well casing head, stock tank, separator, or whatever point is desired, and gas blown through it to the atmosphere. For average testing the well is blown for 10 to 15 minutes. The end of the Pitot tube, which is made of ⅛-inch inside diameter pipe, is then held even with the end of the nipple and pointing into the center of the flowing gas stream. To the other end of the tube is connected a spring gauge, water or mercury manometer.

Pressure at the center of the flowing gas stream is thus obtained and open flow rate of delivery calculated from one of the following formulas:

1. When pressure exceeds 15 pounds gauge

$$Q = 23.81\ D^2\ (P + 14.7)$$

2. When pressure is less than 15 pounds gauge

$$Q = 182.60\ D^2\ \sqrt{P}$$

$$Q = 34.69\ D^2\ \sqrt{W}$$

$$Q = 128.00\ D^2\ \sqrt{M}$$

Where—

Q = Flow per day, thousand cubic feet
D = Pipe diameter in inches
W = Inches of water
M = Inches of mercury
P = Pressure in pounds per square inch

Several Tests

If producing characteristics of the well being tested are unknown, more than one test should be taken at 5 to 10-minute intervals until impact pressures remain constant. This applies to wells which produce at a constant rate but low accuracy is obtained with wells flowing by heads unless many tests are taken.

The minute pressure method is one of the most common used for making approximate measurements of gas well production. The well being tested is first opened wide to blow off the pressure head and then quickly shut in. One minute after shutting in the pressure is noted and the volume may be calculated from the following formula:

$$Q = \frac{1440 \times P \times V}{P_a}$$

Q = Volume, cubic feet per day
P = Gauge pressure after one minute, pounds per square inch
V = Volume of flow string in cubic feet
P_a = Atmospheric pressure, pounds per square inch absolute

This method and formula are based on the assumption that isothermal conditions exist, that after one minute pressure in the flow string is uniform, and that pressure in the flow string is atmospheric under flowing conditions.

The back pressure method of testing as developed by The American Gas Association and the United States Bureau of Mines is based on a straight line logarithmic relationship between delivery and corresponding differential between flowing back pressure and static shutin pressure at the sand face. As this method is based on the application of mathematics beyond the scope of many potential users, its application is accordingly limited.

Side Static Method

The side static method is employed generally for testing large capacity gas wells. The well being tested is blown through an eight diameter long test nipple which has a pressure connection four diameters from the open end. Static pressure is taken at the pressure connection and volume obtained. Tables giving volumes per day with different static pressures and test nipple sizes are easily obtainable.

The orifice meter method of testing is usually employed where volumes and producing characteristics are wanted over a prolonged period and where accuracy is desired. This method requires, of course, existence of a meter loop, or run, and is therefore not used generally unless testing is to be continued over a considerable period.

Gas, or air, to be measured by an orifice meter passes through a loop, or run, which is a straight section of pipe with an orifice flange in it. The orifice flange must be a certain distance from any bends or fittings in the loop on both the upstream and downstream sides of the orifice flange if accurate readings are to be obtained. Meter loop design data are available from any meter manufacturer.

An orifice plate with a round, square-edged perforation in its exact center is placed in the orifice flange and a pressure tap is made on both the upstream and downstream sides of the orifice plate. If the two pressure taps are in the orifice flange itself, one is located an inch upstream from the upstream face of the orifice plate and the other is 1⅛ to 1¼ inch downstream from the upstream face of the plate. If the pressure taps are in the loop instead of the flange, one is located 2½ pipe diameters upstream and the other eight diameters downstream, distances being measured from the upstream face of the orifice plate to the center of the tapped hole.

Testing Volumes

When testing volumes an orifice meter is connected to the two pressure taps, either in the flange or the loop. Gas to be measured passes through the orifice plate and the orifice meter records the static pressure and the differential pressure across the orifice plate.

When using flange pressure taps, the static pressure connection on the meter is to be connected to the downstream pressure tap. When using pipe connections, it is to be connected to the upstream tap.

To calculate volumes passing through the orifice plate the following formula is used.

$$Q = C\ \sqrt{h}\ \sqrt{P}$$

Where—

Q = Rate of flow in cubic feet per hour.
C = Corrected coefficient for orifice plate.
$\sqrt{h}$ = Square root of differential pressure in inches of water.
$\sqrt{P}$ = Square root of absolute static pressure in pounds per square inch.

C for flange connections = CaxFgp × Ft × Ftb × Fm × Fpv

C for pipe connections = Cap × Fgp × Ft × Ftb × Fm × Fpv

Where—

C = Corrected coefficient

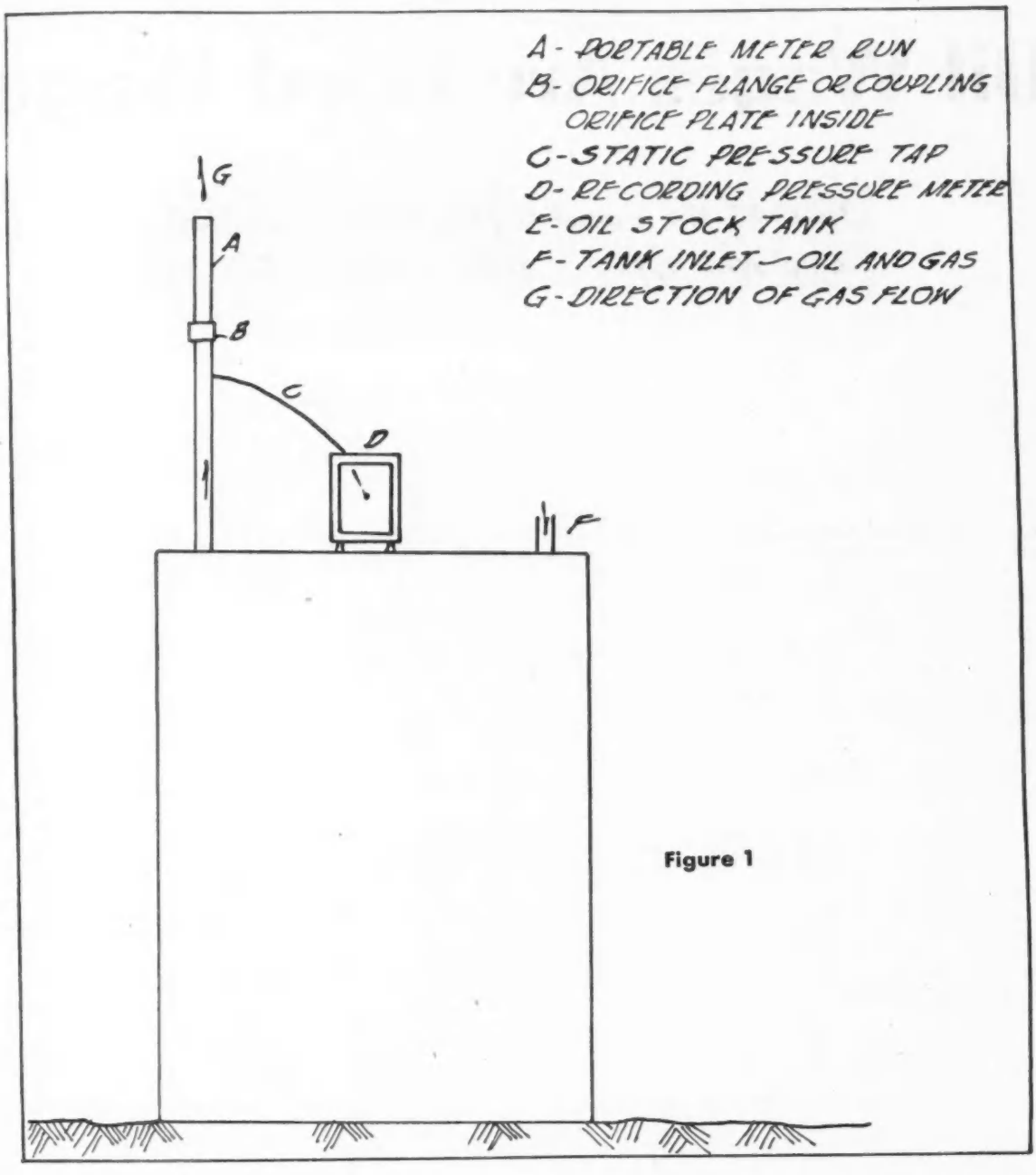


Figure 1

Ca = Flange coefficient for air at 14.4 pounds per square inch absolute and 60° F.
Cap = Pipe coefficient for air at 14.4 pounds per square inch absolute and 60° F.
Fgp = Correction for specific gravity and pressure base
Ft = Correction for flowing temperature
Ftb = Correction for temperature base
Fm = Correction for moisture
Fpv = Correction for super-compressibility.

Formulas for obtaining coefficient corrections are obtainable from different publications.

The orifice well tester consists of a nipple of pipe fitted with a pressure connection and made so that an orifice plate may be placed at or very near the end of the tester and securely held in place.

When using the orifice tester the well being tested is blown through the tester to the atmosphere until delivery is approximately constant. An orifice plate is then placed in the tester, the orifice being of the size which will give between two and eight inches of water pressure on the upstream side of the plate. A U-tube filled with water of mercury is then attached to the pressure connection on the tester and pressure noted. The difference by inches between the columns in the U-tube is noted. Tables are available which give volumes for pressures and orifice sizes.

Simple Apparatus

The recording orifice tester is becoming very popular as a method of testing where gas to be measured is wasted. As illustrated in Figure 1, the apparatus is extremely simple in design and operation.

A section of light-weight pipe, with a threaded or bolted orifice flange, is constructed to the same relative specifications as a regular orifice meter loop except that only one pressure tap is made in the loop.

In testing with this method the portable loop is connected to the well, separator or stock tank and an orifice plate of suitable size inserted. A recording pressure meter is then connected to the pressure tap on the upstream side of the plate. The meter should record pressure in inches of water.

The same formula is used for calculating volumes with this method as for a regular orifice meter since the same data is obtained. The downstream pressure is atmospheric since the downstream end of the loop is open to the atmosphere. The upstream pressure is recorded by the pressure meter in inches of water. This is the differential pressure also, the downstream being atmospheric.

This method of testing wells is very accurate, comparing to the orifice meter and its closed loop, and is becoming popular where gas to be tested is wasted. The meter and loop are relatively cheap units and simple to use.

Oil Wages Are Good Wages

In 1943 the industry paid nearly 400,000 employes approximately a billion dollars

THE importance of the petroleum industry as an employer of workers at relatively high pay is shown in the accompanying tables prepared from the Department of Commerce publication, *"Survey of Current Business"* for June 1945. The tables also confirm the fact that the number of oil company employes has increased along with volumes of oils sold, in spite of improved efficiency in the use of manpower. With regard to number of employes in the industry, it should be recognized, moreover, that in the more recent years the industry would have employed many more persons than it would have done if more qualified workers had been available.

Salient Data on Wages and Salaries and Number of Employes in Petroleum Producing, Refining and Pipe Line Industries as Compared with Private Industry in General

(Data from Survey of Current Business, June, 1945)

ITEM	All Private Industries (Total)	MINING		MANUFACTURING		TRANSPORTATION	
		All Mining	Crude Pet. & Nat. Gas Products	All Mfg.	Products of Pet. & Coal	All Transportation	Pipe Line Transportation
Wages and Salaries in Private Industries (Millions of Dollars)							
1929	$45,206	$ 1,515	$ 321	$16,092	$ 236	$ 4,719	$ 48
1930	40,720	1,327	293	13,850	238	4,237	42
1931	33,607	993	223	10,810	190	3,531	38
1932	25,297	683	168	7,678	157	2,656	29
1933	23,660	686	177	7,827	149	2,455	29
1934	27,420	911	240	9,643	174	2,660	34
1935	29,984	969	257	10,829	192	2,884	36
1936	33,866	1,133	287	12,410	202	3,237	40
1937	38,432	1,305	333	14,571	242	3,549	47
1938	34,564	1,101	333	11,837	244	3,179	45
1939	37,519	1,137	315	13,585	250	3,429	43
1940	41,130	1,287	336	15,584	295	3,635	45
1941	51,537	1,540	363	21,714	355	4,261	50
1942	65,554	1,768	354	30,922	441	5,253	57
1943	78,885	1,986	409	40,904	522	6,553	68
Average Annual Earnings Per Full-Time Employe in Private Industries							
1929	$ 1,408	$ 1,526	$ 2,019	$ 1,543	$ 1,844	$ 1,642	$ 1,927
1930	1,361	1,424	1,980	1,488	1,904	1,610	1,802
1931	1,259	1,221	1,890	1,369	1,810	1,549	1,794
1932	1,086	1,016	1,600	1,150	1,619	1,373	1,691
1933	1,019	990	1,427	1,086	1,505	1,334	1,443
1934	1,076	1,108	1,472	1,153	1,513	1,393	1,521
1935	1,127	1,154	1,558	1,216	1,587	1,492	1,575
1936	1,181	1,26	1,594	1,287	1,629	1,582	1,609
1937	1,254	1,366	1,734	1,376	1,833	1,644	1,822
1938	1,216	1,282	1,734	1,296	1,863	1,676	1,909
1939	1,255	1,367	1,684	1,363	1,852	1,723	1,930
1940	1,297	1,388	1,714	1,432	1,954	1,754	1,928
1941	1,462	1,579	1,779	1,653	2,113	1,888	2,099
1942	1,733	1,795	1,934	2,023	2,410	2,179	2,298
1943	2,026	2,161	2,298	2,349	2,806	2,489	2,686
Number of Full-Time Equivalent Employes in Private Industries (Thousands)							
1929	32,101	993	159	10,428	128	2,874	25
1930	29,917	932	148	9,309	125	2,632	24
1931	26,689	813	118	7,895	105	2,280	21
1932	23,289	672	105	6,678	97	1,934	17
1933	23,215	693	124	7,204	99	1,841	20
1934	25,486	822	163	8,364	115	1,910	22
1935	26,607	840	165	8,904	121	1,933	23
1936	28,665	897	180	9,645	124	2,046	25
1937	30,646	955	192	10,591	132	2,159	26
1938	28,417	859	192	9,131	131	1,897	23
1939	29,895	832	187	9,967	135	1,990	22
1940	31,712	927	196	10,882	151	2,072	23
1941	35,250	975	204	13,137	168	2,257	24
1942	37,817	985	183	15,282	183	2,411	25
1943	38,937	919	178	17,411	186	2,633	25
Average Number of Full-Time and Part-Time Employes in Private Industries (Thousands)							
1939	31,308	832	187	9,967	135	2,073	22
1940	33,205	927	196	10,882	151	2,164	23
1941	36,810	975	204	13,137	168	2,358	24
1942	39,369	985	183	15,282	183	2,513	25
1943	40,450	919	178	17,411	186	2,744	25

In 1943 the industry paid wages and salaries of approximately a billion dollars to nearly 400,000 employes in the producing, refining, and pipe line divisions, an average of over $2500 per employe for the year. The 40 million employes in all private industries in the same year earned about 79 billion dollars, or a little less than $2000 each. Oil company employes were somewhat less than 1 percent of the total in private industry but earned more than 1 percent of all wages and salaries.

In the production of crude petroleum and natural gas the number of employes increased from 105,000 in the depression year 1932 to a high of 204,000 in 1941, last year before the wartime shortage of manpower, in reflection of the steady increases in consumption and production of oil and gas. Meanwhile, average annual wages and salaries increased from $1600 in 1932 to $1779 in 1941 and to $2298 in 1943, the latter figure evidently reflecting much overtime pay.

In manufacturing of products of petroleum and coal the number of employes increased from 97,000 in 1932 to 168,000 in 1941 and to 186,000 in 1943, with average annual earnings rising from $1505 in 1932 to $2113 in 1941 and $2806 in 1943.

In pipe line transportation the number of employes increased from 17,000 in 1932 to 24,000 in 1941 and to 25,000 in 1943, and average annual earnings rose from $1691 in 1932 to $2099 in 1941 and $2686 in 1943.

The increases in number of employes in the various divisions of the oil industry have reflected the constantly increasing use of petroleum products and have been generally in line with increases in number of employes in other lines of mining, manufacturing, and transportation, although recent war years have abnormally swollen employment in many lines of industry and for industry in general.

Evidence of the relatively high wages and salaries in the petroleum industry is offered in the accompanying tables, which show consistently over the years higher average annual earnings per employe in petroleum production than in all mining, higher annual earnings in manufacture of petroleum products than in all manufacturing, and higher annual earnings in pipe line transportation than in all transportation.

Let's Look at

Electrical Exploration

Electricity has presented man with a wealth of tools he uses but does not understand

By WM. BRADLEY LEWIS
The Elflex Company, Houston

It is not the purpose of this paper to develop the theory of electromagnetic phenomena in simple language without recourse to mathematics. Nor is it the purpose to discuss theory in any way whatsoever. It will merely exhibit certain implications of theory that have been pointed out elsewhere, but which are still generally not appreciated.

THE common use of a tool does not necessarily mean that its underlying principles are commonly understood. When tools were less complicated this statement would have been ridiculous; no one who used a lever to move a heavy object, or a wedge to split a log, could fail to grasp the underlying principle of the tool.

With the advent of the internal combustion engine and electricity, new tools, designed by experts and engineered to be used by anyone, have changed the picture. There has even been a certain pride in the statement: "I don't understand a thing about electricity." This statement could honestly be made by many who should know something about it and by some who pretend to know something about it.

The Practical Man's Dilemma

In spite of the fact that the elements of the subject are simple, the application is frequently very complicated. The "practical man" is concerned with application, so much so that he is lost in details and never views the simple underlying structure. What is unfortunate, he may even be convinced that he does understand principles when he is merely extrapolating from a special example with which he has had some experience.

We are all well aware that light travels 186,000 miles a second. We all know that visible light, radio waves, x-rays and other "rays" belong to the same family. We know that they are reflected from certain surfaces, are bent (or refracted) at other surfaces, and are absorbed as they pass through certain media. We know vaguely that all of them are "waves" and are distinguished merely by their wave lengths. We know that the short wave length waves or "rays" penetrate material that visible light fails to penetrate. We may know also that some of the long wave length waves penetrate certain materials that are opaque to visible light. And that's about all we do know.

Few of us know just what we mean when we speak of a "wave." We have never thought how a light wave resembles other waves, and how it differs from other waves—say sound waves, or waves on the surface of water. We have seldom considered what changes are required in our notions about these waves when they are set up in a medium different from the one we generally associate with their transmission.

A complete description of the behavior of electromagnetic waves was given by Clark Maxwell. This description is in the form of mathematical equations. These have the advantage of conciseness and generally, but they are not readily understood by the practical man. Certain implications have been elaborated by electrical engineers and have become common knowledge. Other implications have been neglected because they were not pertinent to the special problem which the engineers were attacking.

In particular, great pains have been taken to investigate the behavior of electromagnetic waves in a non-conducting medium such as the air, but little effort has been spent on investigating their behavior in a conducting medium such as the ground. This is understandable. Light, and radio waves, are transmitted through the air and not the earth. These two members of the family are the most familiar and most generally useful. Neglect of other members of the family, which can be transmitted through the ground, is natural until such a time as some use can be made of them.

New Stimulus

Application to geophysical prospecting creates such a use, and invites investigation. This investigation has been carried out in detail starting from the general laws formulated by Maxwell. Certain startling differences in behavior are at once evident. These are found in the absorptive and dispersive effect of the ground on the waves, and in the speed with which the waves travel in the ground.

In the air, absorption is negligible. An electromagnetic wave, such as light, travels billions of wave lengths distance without appreciable dimming by absorption. In the ground, low frequency waves are almost completely absorbed in one wave length distance of travel.

In the air, dispersion is negligible; light of all wave lengths travels at the same speed. In the ground, dispersion is large. If the wave length is doubled the speed is cut in half. So it is somewhat meaningless to talk of speed of propagation unless the wave length is specified.

If investigation is confined to waves of appreciable wave lengths, say 10 to 20 thousand feet, it will be found that the speed of propagation is surprisingly slow compared with 186,000 miles a second. It is, in fact, of the order of 40 to 20 thousand feet per second.

TABLE 1

For ground with resistivity of 10 ohm feet

Frequency cycles per sec.	Wave Length feet	Speed feet per sec.
1.5	25,600	12,800
1.0	18,100	18,100
2.0	12,800	25,600
4.0	9,050	36,200
10.0	5,740	57,400
400.0	905	362,000
1000.0	574	574,000

Comparisons

It is at once evident that much more violent changes in the behavior of electromagnetic waves accompany the change from air to the ground, than are associated with changes along the spectrum of electromagnetic waves in air. An x-ray of extremely high frequency and short wave length and a radio wave of much lower frequency and correspondingly longer wave length, behave in the air practically in the same manner. But in the ground a wave of ten cycles per second frequency behaves quite differently from one of one cycle per second frequency.

It is not very profitable to extrapolate knowledge of how electromagnetic waves behave in a non-conducting medium, to predict their behavior in a conducting medium. The problem must be attacked anew from the beginning.

In Table 1 are certain properties of low frequency electromagnetic waves in a representative ground.

The dimming effect of absorption is such that when an electromagnetic wave has traveled through the ground a distance of one wave length, its amplitude is reduced to about 1/500 of its original size. Absorption is progressive; each unit distance travelled reduces the intensity by the same factor. For small distances this effect is not so noticeable;

as the distances become larger the effect takes hold rapidly. This is illustrated in Table 2.

The information contained in these tables is sufficient to give a clear idea of the possibilities of electromagnetic waves in prospecting for petroleum. It is evident that "penetration" to considerable depths is possible, despite absorption, by using waves of long enough wave length. It is also evident that absorption can be used to separate deep from shallow effects. With low frequencies and long wave lengths, deep effects will be present with higher frequencies and shorter wave lengths the deep effects will be extinguished.

Mirrors in the Ground

A most important factor lies in the nature of the reflecting horizon. If the horizon acts as a good reflector, a large fraction of the incident energy will be returned. If the horizon is a poor reflector, only a small fraction will return. Horizons which have a strong resistivity contrast are good reflectors. Oil and gas present a strong resistivity contrast. Salt water presents a strong resistivity contrast *but of the opposite sign.* A porous horizon that normally contains salt water, may, in a restricted portion, contain oil. Reflections from this horizon will suffer a violent change in character when they pass from the salt water region to the oil region. This change creates a well defined anomaly correlatable directly with the local accumulation of oil.

The use of electromagnetic waves to probe the subsurface in search of petroleum is a most obvious choice now that we have examined their behavior in the ground. The most characteristic physical property of petroleum, (its high electrical resistivity), is the very property that most strongly influences the behavior of electromagnetic waves. Excellent direct indications of oil are possible.

The applications of these principles has been developed by careful engineering. The possibilities have proved entirely practical. Completely new horizons are opened to exploration by a method that puts geological structure in a secondary position and raises accumulation of oil to the primary position.

Low frequency electromagnetic waves are sent into the ground by passing a periodically reversed current through two grounded electrodes. The effect of this current is observed in terms of the potential it produces between two probe electrodes, suitably disposed relative to the current electrodes. The actual electrode pattern is not critical and can be chosen to suit the conditions in the area being explored. The magnitude of the alternating potential picked up by the probe electrodes is measured at several different frequencies. Similar measurements are made at stations suitably scattered over the area.

Such surveys show surprisingly constant background readings over large areas, but give well defined anomalies over production. This has been confirmed time and time again where the course of ordinary field work tied in with producing fields. Confirmation by drilling subsequent to exploration has been obtained also.

Exploration can be carried out rapidly and economically. Reconnaissance work employing the spacing of one mile between stations has been used to cover large areas quickly. Detail work, to confirm any prospects so found, follows later.

Conclusions

Geophysical methods which work only on the delineation of geological structures associated with oil traps give information that has proved valuable. It is removed, however, one step from the information really wanted, namely: will this location produce oil?

The electrical method described is a more direct answer to this question. A strong positive anomaly indicates a resistivity contrast that may well be caused by petroleum which has replaced the salt water found elsewhere in a subsurface stratum. A dry structure does not produce an anomaly; a structureless oil pool will produce an anomaly. Whether the oil occurs in a structural or purely stratigraphic trap, it reflects the electromagnetic waves in the same manner.

Here then may be the answer to the oft-expressed demand for a new geophysical tool, a tool that is not merely a refinement of those already in use. This tool seeks direct evidence for the presence of petroleum by using electromagnetic waves, a transmissible form of energy which is influenced strongly by the outstanding physical characteristic of oil and gas.

The new method shows great promise, but its ultimate value to exploration will be recognized only through use. Pioneers with courage and confidence should reap a rich reward in discoveries.

TABLE 2

Distance travelled in fractions of wave length	Dimming by absorption intensity as % of original intensity
0.2	29
0.4	8
0.6	2
0.8	0.7
1.0	0.2

Safety on the High Seas

Standard Oil Company of California is the first industrial concern in the United States to win four National Safety Council awards for "distinguished service to safety." The fourth award was presented to officers and men of the company's tanker fleet. Pictured with the "S" pennant and certificate, left to right, are: R. L. Donovan, chief safety engineer, Standard's industrial relations department; Earl F. Campbell, western regional director, National Safety Council; J. L. Hanna, vice president of Standard in charge of marine activities; J. H. McEachern, manager; A. E. Kihn, assistant manager, and G. D. Washburn, safety engineer of Standard's marine department.

Rocky Mountain Operators Favor Flat Oil Royalty

Various problems confronting the Rocky Mountain district were discussed at the recent meeting of the board of directors of the Rocky Mountain Oil-Gas Association, held in Casper, Wyoming. Much interest was centered around United States Senator O'Mahoney's leasing bill and the meeting favored a flat royalty of 12½ percent, removal of acreage limitations and making assignments of oil and gas leases valid for a period of two years when filed with the Secretary of the Interior.

Gas companies of the region came into the Association in a body at the meeting.

The board of directors elected the following members: C. C. Buchler, Standard Oil Company (Indiana); Hal Thompson, British-American Oil Producing Company; R. L. Carruthers, California Company; Harry Thorson, representing all Osage and Newcastle operators: K. W. Yeates, Wasatch Oil Refining Company; Joe Minton, Western Oil Refining Company; and R. D. Smith, Union Oil Company of California, Glacier Division.

Isoprene Recovery Plant Planned for California

Shell Chemical Division of Shell Union Oil Corporation will construct a $2,000,000 isoprene recovery and purification plant adjacent to the butadiene plant now operated in the Los Angeles area for RFC's Office of Rubber Reserve.

BROWN'S DEEPEST OUTSIDE DRILL PIPE CUT

The world's deepest producer . . . Smith-State Unit No. 1, Weeks Island, Iberia Parish, Louisiana, owes its successful completion to the efficiency of the Brown Outside Cutting Tool. When the drill pipe stuck at 14,023' Brown was called in to do a cutting job.

With the Brown Outside Cutter, the 3½" drill pipe with 4" tapered upset tool joint was cut at 13,697'. Success of the cut is due to the design of the cutter, in which the gripping and holding action is separate from the cutting action. A special type inclined cylinderical slip and bowl supports the pipe, leaving the knives entirely free of weight for the cutting operation. The cutters are fed smoothly into the pipe, without supporting strain, by rotation of the cutting string.

This deep cut is another example of the performance of Brown cutting tools in the hands of their expert operators. Through their efforts this deep hole has been converted into a producer at the record depth of 13,505' to 13,520'. When you are confronted with cutting and fishing troubles, call Brown first.

BROWN OIL TOOLS, INC. Houston, Texas

EXPORT SALES: ACME WELL SUPPLY CO., 19 RECTOR STREET, NEW YORK 6, N. Y.

Bin Replaces Exposed Rack as Storage for Tong Parts and Floor Tools

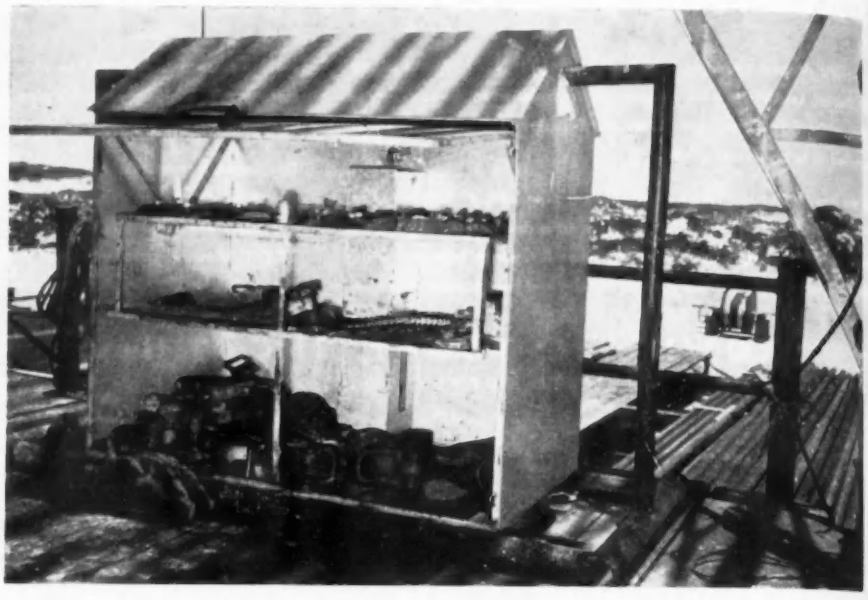
Instead of the usual storage rack for tong jaws, wrench chains and other miscellaneous replacement parts for derrick floor equipment, one company places a unitized bin on the floor, within which the parts are stored on shelves, readily accessible and in condition for quick checking.

TOOL STORAGE

The unit consists of a sheet steel house, integral with welded pipe base, in which a pipe bail or lifting member has been incorporated. This pipe passes through both end walls and forms additional support for the roof.

At the center of the back panel is built a weight box, extending above the top shelf. In this space moves the counterweight which equalizes the weight of the pivoted front, which swings up much as does an overhead garage door as the bin is opened. This retracting feature of the front section provides more clearance on the derrick floor, as well as protecting the panel from accidental damage and aiding visibility on the shelves.

A ¾-inch angle is welded at the outer edge of each shelf, to provide against loss of small pins and other units through shifting caused by vibration of the derrick under drilling conditions.



Covered throughout with aluminum paint, the interior of the bin is light, and selection of the required equipment is quickly and easily made. The use of aluminum paint at this point also tends to promote better housekeeping, as grease or oil shows up and steps can be taken for removal before the accumulation becomes serious.

PENBERTHY
"REFLEX"
WATER GAGE SET

For oil field, locomotive type and marine boilers. Water shows black — steam shows white; the water level is unmistakable. U-Bolt construction is strongest and simplest to service. Glass replaced by simply removing nuts on face of gage . . . unnecessary to work between gage and boiler. Conforms with A.S.M.E., Federal and State requirements when used for pressures specified by their respective codes.

This is one of the complete line of Penberthy gages that meet every liquid level gage requirement.

See Pages 2450 to 2455, Composite Catalog.

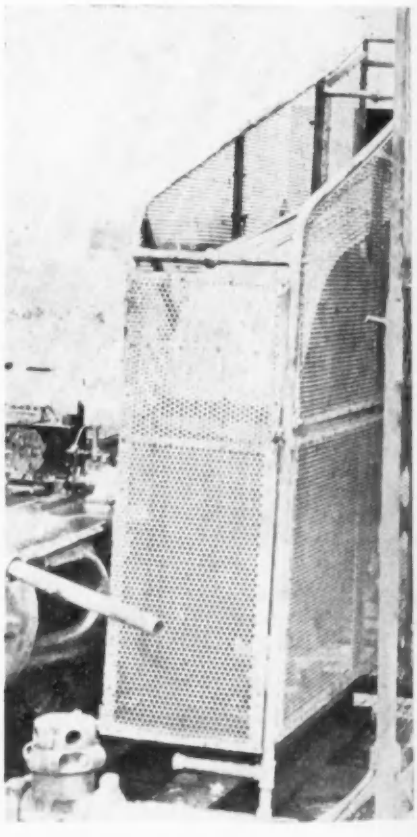
PENBERTHY INJECTOR CO.
DETROIT, MICH. Canadian Plant WINDSOR, ONTARIO

Sectional Screen Safeguards Pump V-Belt Drive

A common headache experienced by field men is the maintenance and preservation of the cumbersome guards around V-belt drives. Constant use, together with the rough treatment usually accorded such field equipment, usually results in the panels becoming ill-fitting and more of a hazard to the belts than a help. One company superintendent solved much of this trouble by designing a set of guards which not only affords improved protection to belts and personnel, but makes for more rapid assembly and disassembly in the field.

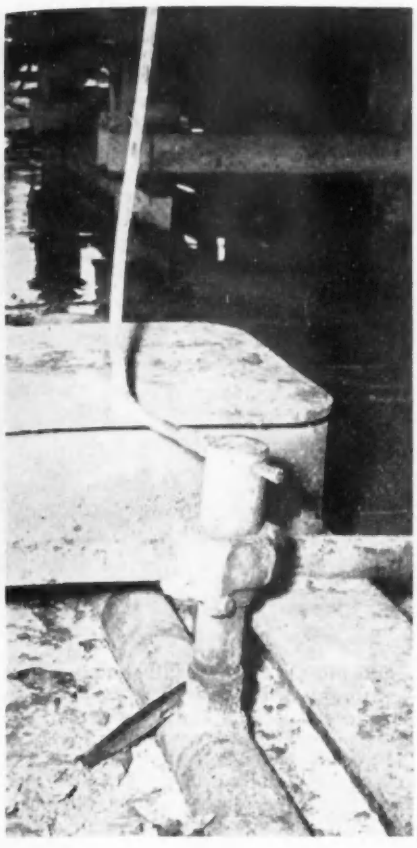
BELT GUARDS

A framework of welded 1-inch pipe was assembled, the two sides of the guard being practically identical, as shown in the photograph. But here that similarity to other guards ceases. The two halves are joined together by several spacers, the latter being short lengths of pipe cut in half and joined with unions. Because of the more solid framework and the ease with which the guard can be broken down due to the detachable spacers, heavier screen was used, the latter being a punched sheet metal which retains its shape longer. The screened panels are bolted to the pipe framework, making it possible to replace them should it become necessary. A small hinged door at the end of the guard may be opened for inspection purposes.



DRILLING HINTS

Improved Tie-In Protects Mud Pressure Gauge



The usual method of welding a nipple or collar to the mud line as a point where the line to the mud-pressure gauge at the driller's stand may be connected has two drawbacks which can affect drilling at most inopportune times. The connection is stiff, and tends to transmit mud-pump pound through the gauge line to the instrument itself; and, in case of a break where the small fitting is welded into the main, it is necessary to shut down the pumps for a repair.

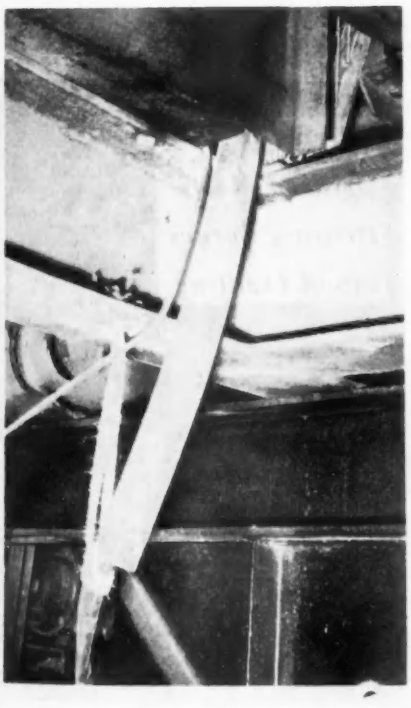
GAUGE HOOK-UP

One drilling superintendent welds a heavy collar to the mud line, on the horizontal run between pumps and standpipe riser, screwing a short nipple into the threaded end of the collar, and mounting thereon a quick-acting union, the upper half of which carried a blanked nipple. Into this nipple is set a short length of ½-inch pipe, one end being blanked, the other carried, through a wide sweep, upward to the mud-pressure gauge.

This pipe, passing through the walls of the nipple and being welded to them, is perforated with a small hole which admits fluid to the small line, but which acts as dampener to reduce pulsations.

The line to the gauge, with the wide sweep and side mounting, has ample flexibility to absorb all "jump" imposed on the main line by pump vibration, and the cushioning effect results in longer life and higher fidelity of recording.

Hose Section Protects Wiring Leads Against Chafing



Where the leads for rig lighting circuits must be brought in below the derrick floor, and taken through an opening between members of the floor supports, the effect of rig vibration often leads to chafing of the insulation and resultant shorts and equipment damage.

DERRICK LIGHTING

On one rig, where the lighting generator is driven by V-belts from a shaft on the drawworks transmission system, the current leads are taken through a section of extra heavy hose, long enough to extend from the floor level to a point well below contact with the I-beams of the floor structure. A light soft line, tied around the two leads below the point where they emerge from the protector or guard suffices to hold the unit in place.

The hose used need not be new, but may be salvaged from sections of water or stream hose which has been damaged in rig floor service, but from which short sections, ample for guard units, may be cut. Where the upper end of the hose is exposed to water, wrapping the leads with tape to form a seal prevents flow to unit.

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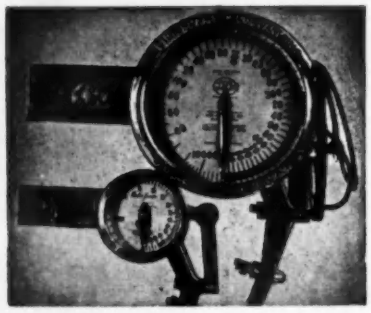

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ON PAGE 95 OF THIS ISSUE

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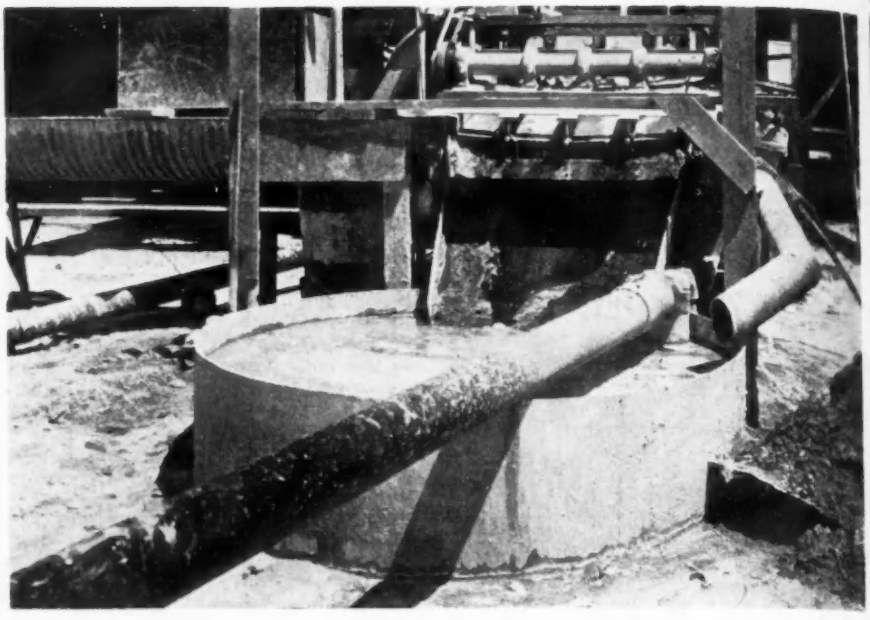

CUTTINGS DISPOSAL

Where the slope of the land does not aid in the transfer of cuttings from the shale shaker to the spoils pit, or where sandy soil makes the maintenance of a sump pit difficult, the use of a shallow steel tank as cuttings trap eliminates much work in their removal. The tank permits jetting of the spoils without difficulty, the elevated setting of the tank reducing the suction height over which the jet must lift the cuttings before transferring them horizontally to the pit.

Use of the tank also facilitates the use of the cuttings for filling low spots around the rig, as road repair material, or surfacing to keep down dust at a dry location in sandy terrain. Cuttings may be shoveled from the shallow tank without need for entering the pit, and permitted to drain before transporting to point of use.

The tank needs no sub-base, even on sandy soil, as the unit loading is light and will not shift the base even if fluid be allowed to overflow the rim and soak the surrounding area. The tank edge is sufficient support for the discharge siphon, as well as for the bypass which permits fluid to flow directly from the mud returns line to the tank without passing over the screen.

Emptied and washed clean of settlings, the tank is easily transported to the next location, and may be utilized as container for miscellaneous small parts—preferably after being placed on the truck bed.

The use of the steel tank, instead of a mud pit, also allows full sampling of the cuttings, as the unit may be cleared of all accumulations and washed out, without possibility of contamination of the materials then collected, through infiltration or leaching of the soil. The entire amount of cuttings removed from the hole during any period may be checked in like manner, simply by by-passing the shale shaker long enough to clear the tank, and repeating the process when a specified amount of hole, as shown by the drilling record, has been made. This material, dried and weighed against core data, affords a check on the actual diameter of hole being made, and aids in computing cement demand.

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The Outlook

Only if some very large fields are discovered is there likely to be more than 27,000-30,000 wells drilled in the U. S. during the first year after V-J day. Postwar wells will be deeper and there will be expansion of secondary recovery projects, gas conservation installation, an enlarged drilling program abroad and heavy pumping equipment purchases.

* * * *

Refiners in Districts 1 and 2 likely will have less crude oil to run in September, and hence there will be less gasoline for motorists. The cause is a shortage in District 3 that has amounted to 80,000 barrels daily during the past four weeks despite record crude production volumes. If this condition continues the value of gasoline coupons might be reduced.

* * * *

Production of super-aviation gasoline (115 octane) will be stepped up materially. This necessarily means refineries will manufacture less 100 octane.

* * * *

A large capacity pipe line will be built in the near future from the Saudi Arabia oil fields to the Mediterranean Sea. Announcement of the formation of a pipe line company for this purpose assures its construction. Page 77.

* * * *

Future line of study: What materials lend themselves to the production of atomic energy by such means as may be primarily developed and does the effect vary in different bases? Where will oil fit into the picture? Some in the industry profess to see atomic power as great aid in shooting and well conditioning operations. Page 69.

* * * *

Russia plans an oil pipe line linking Constanza in Roumania with Odessa in the Ukraine and will transport oil from the rich Ploesti fields.

* * * *

Since discovery of an important Ordovician Wilcox pool in the Anadarko Basin, oil men predict a revival of activity such as Oklahoma experienced shortly after World War I.

* * * *

Relaxation of wage controls will be actively pressed toward the end of the year as reconversion gets well under way and producers of civilian goods find themselves unable to meet the demands of labor accustomed to shipyard wages. Proposals have been made that wage increases be permitted where they do not entail price increases, which would make adherence to the Little Steel formula more difficult.

* * * *

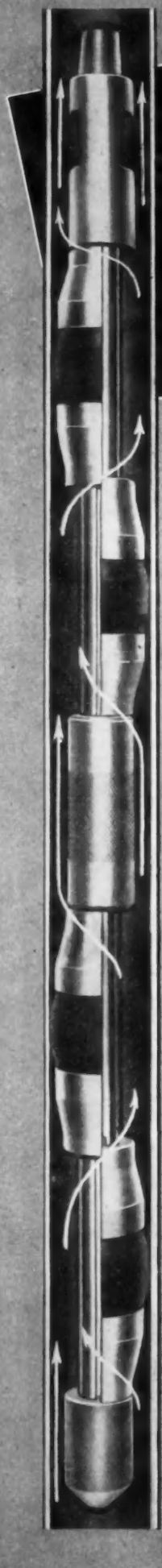
Transportation issues will be a major subject of consideration in Congress next winter. Decisions must be made on problems of termination of wartime transportation controls, disposition of surplus transportation property, and possible steps to retain some of the benefits in efficiency developed to meet war needs.

* * * *

The American oil industry may be the beneficiary of German research. Experts sent abroad are digging into ruins of German plants, discovering hiding places of valuable data, and talking with officials of Nazi plants. Operating largely through the Technical Advisory Committee of the PIWC, PAW will make these secrets available first to United States war plants and, upon the return of peace, to all. Page 70.

* * * *

Potentialities of the Navy's Alaskan oil reserve will be indicated soon by drilling under way, but no move will be made to develop Naval Petroleum Reserve No. 4 except in the event of a national emergency. If and when any extensive development is undertaken, the Navy promises it will be done by the industry, in accordance with long-standing Navy policy.



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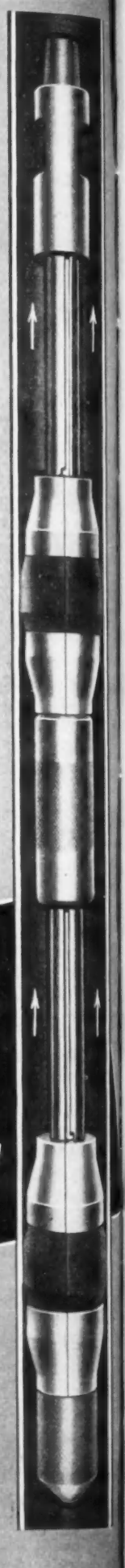

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The Week's News

RESUMPTION of large-scale civilian activities had the green light in Washington over the week end as federal agencies, alert to what appeared to be an early end of hostilities with Japan, began to make plans for easing of wartime controls. Quick changes in the domestic picture for gasoline and fuel oil are looked for. Story below.

Future of Atomic Bomb—Possibilities of the use of atomic energy to turn the wheels of the nation came with announcement of the atomic bomb, but more sober consideration of the potentialities of atomic energy—and the difficulties of reaching them—leads observers to the belief that oil wells, refineries and coal mines will be called upon for large-scale production for many years to come. Page 69.

Immediate Postwar Plans—The new bomb, however, is seen as speeding the end of the war to a matter, possibly, of weeks, and federal control agencies are rushing their plans for reconversion of industry. The great majority of war Production Board controls on material and production will be lifted promptly at the end of the war; rationing will be eliminated more gradually, and an effort will be made to continue price control until the danger of "victory inflation" is past. Continuance of OPA, however, will be vigorously fought. Page 70.

Nazi Formulas to Help U. S.—Long-guarded Nazi secret formulas, methods and developments in the field of oil are rapidly being whipped into shape by PAW and the technical advisory committee of the PIWC for use in this country, initially in the production of military products but eventually by the whole oil industry. In some instances literally dug out of the ground, the documents were gathered by a technical mission which went to Europe even before the fall of Germany to seize the material before it could be destroyed or spirited away. Page 70.

Oil cost of the war against Germany was figured last week by PAW as approximately 524 million barrels of products, not including the oil used to get men, planes and equipment to the theatre of war. An even more impressive figure was developed by PAW by putting the figure in gallons—22 billion. Page 70.

Alaskan Naval Reserve—The Navy Department shortly will have its first information regarding the productive possibilities of Naval Oil Reserve No. 4 in Alaska. Preliminary work has been completed and drilling is underway. Navy operations will be purely exploratory; any development of the reserve, it is promised, will be turned over to the industry under contract.

Borneo's Drop of Oil—Navy officials scuttled all ideas that oil from liberated Borneo fields would be a factor in the war against Japan. Fully operative, the fields would supply only about 3 percent of the oil needed for the Pacific operation; but they will not be fully operative for a year to 18 months, it is estimated.

FEA Insists on Argentine Deal—Despite criticism, the Foreign Economic Administration is going through with its trade of fuel oil for Argentine vegetable oils, and plans to send 235,000 tons of heavy oil to Argentina by the end of the year, in return getting 400,000 tons of flaxseed and products. Page 71.

That Ickes' Resignation—President Truman has not had time to confer with Secretary Ickes about his cabinet status. In the meantime the Anglo-American oil pact is delayed and reports fly about PAW's future. Page 71.

California Operations Prospects—A drastic cutback in crude oil production in California is likely after V-J day, which, of course, will result in curtailed drilling, etc. Page 76.

Carthage-Monroe Pipe Line Schedule—The 24-inch line between the Carthage, Texas gas field and Monroe, Louisiana, is expected to be ready for operation in January. It is being built by United Gas Pipe Line Company. Page 77.

American Tanker Construction—Since war started in Europe, and up until July 1, 1945, American shipyards have produced 689 tankers. Fifteen were delivered in July. Page 69.

Federal Agencies Busy Preparing for Possible End of Japanese Hostilities

Federal agencies in Washington were working feverishly over the week end, preparing to tear down the nation's war structure and pave the war for quick resumption of large-scale civilian activities when the world again reached a state of peace for the first time in a decade.

Hoping to untie the controls imposed during our three years and eight months of participation in the war as rapidly as possible, PAW, WPB and OPA officials were surveying last-minute situation reports to determine what regulations would have to be continued temporarily into the postwar era to insure an orderly transition.

Every control that can be withdrawn will be lifted as quickly as the necessary documents can be prepared. Those that must be retained will be lightened as much as possible; these, few in number, will deal with situations where the end of hostilities will not mean the immediate release of large quantities of materials, such as lumber.

Among the first concrete evidences of the end of the war may be the lifting of gasoline rationing. With military operations halted, the needs of the armed forces will dwindle to a fraction of what they have been, but it will not be possible to cut back production as quickly and, unless product is moved into consumption at a high rate, storage difficulties are foreseen.

Fuel-oil rationing similarly will be terminated, for the same reasons, and the reduced military requirements for tetraethyl lead will permit quick improvement in gasoline quality, both house brand and premium.

PAW was represented as prepared to start the dismantling process immediately but liquidation formalities will take several months; no industry men who are members of the staff have any desire to stay in Washington longer than is necessary, however, and it is expected that no time will be wasted in getting the agency out of business.

At the WPB the way has been greased for the revocation of all but a few of the control orders still outstanding, and only in the case of materials that will remain in short supply even after war production stops will it be necessary to continue any restrictions. Officials estimate that the cessation of hostilities should be reflected quickly in increased supplies of oil country tubular goods, motors and other equipment but that tool joints, bits and certain other items will become adequate in supply more slowly because of dammed-back demand.

Meanwhile, it was apparent that WPB would remain in existence for at least six months after the end of the emergency provided in the war legislation under which it was created in line with President Truman's instructions to Chairman J. A. Krug to devote his energies to speeding up the reconversion

Challenges as the War Nears Its End

As The Oil Weekly went to press it appeared that the greatest war of all time has come to a conclusion with the Allies as victors over the totalitarian powers. If perchance there should be a hitch in the peace it cannot postpone the end of the war more than a very short time, weeks, because the Japanese Empire has reached the end of its rope and nothing but surrender or annihilation is left for the Nipponese.

And now comes the conversion of America to peace operation, a job which offers almost as great a challenge as did the war. How soon will controls, placed upon industries and individuals in the conduct of their business, under the theory that such inhibitions were necessary to the winning of the war, be removed? What will be the attitude of labor unions in the co-operation so necessary to restore America to peace-time operations? How soon will manpower be available for peacetime operations? Will the attitude of many workers, who have been failing to give an honest day's work in return for a day's wage, change?

And, of prime importance, how soon will we be able to adjust the returning veterans to peace-time jobs? Many of us are fearful that the country is not prepared to assimilate the returning men from the service. Much has been said, but insofar as our laws and bureaucratic regimentation are concerned, little, if anything appears to have been accomplished by the Congress on the matter to date. What we are fearful of is that under the hysteria of millions of men being released from service, snap judgment may be made which will afford no lasting value to the men but which will adversely affect the nation for another generation.

We are all thankful that a horrible war with its slaughter of humanity has either ended or approaches the end. And with that feeling of thankfulness we should approach our peacetime endeavors with the determination to match in peacetime the devotion our boys have displayed on the battlefront.

THE WEEK'S NEWS

program and the latter's promise that the agency would continue as long as it was needed.

Only in the OPA will the return of peace see no immediate dismantling, but even here rationing requirements will be lifted as rapidly as civilian essentials now controlled come into the market in adequate volume. Big job of the OPA is to avert a threatened "victory inflation" and every effort will be made to maintain price controls until civilian industry is back in full swing.

Transition Measures

To round out the conversion program, Congress will consider a number of measures designated to make the transition easier. Because some of the war agencies have responsibilities which will lap over into the postwar era, Congress is expected to be asked to consider legislation which will transfer such activities to regular departments or, if their continuation is only temporary, set up interim agencies to handle them.

Congress is also expected to get down quickly to enactment of a postwar tax bill and is certain to have a relief measure ready for application before the end of the one year. Surveys and studies in the field of taxation have been under way for some time, and it had previously been announced that public hearings would open in October before the Senate finance committee and probably before the House ways and means committee as well.

First targets for cuts will be the excess profits tax, the corporation income tax and the individual income tax. The position of the excise levies on gasoline and oil is more doubtful, but there is reason to believe a reduction may be granted to bring them into line with the reduced national income which is expected to follow the cessation of war production.

The end of the war sees the State Department prepared to come to grips immediately with the problems of international trade which must be ironed out if world commerce is to be restored to normal courses. So far as oil goes, a good start will be made with consumation of the pending Anglo-American petroleum agreement, which probably will be a multi-lateral pact from the very start, while problems faced by the industry in trading in individual countries will be dealt with in reciprocal trade agreements and other arrangements which the department is prepared to press.

Major problems which confront the industry as it looks toward an era of peace are the disposition of wartime facilities, national oil policy and subsidies. All three subjects are expected to come up in Congress in the very near future.

Protest Rig Assessments

A new rate schedule for assessments of drilling rigs in Mississippi has been set by the State Tax Commission and assessors of oil-producing counties.

Diesel and diesel-electric rigs capable of drilling over 7500 feet, $45,000; steam rigs drilling more than 7500 feet, $40,000; diesel and diesel-electric rigs 5000 to 7500 feet, $30,000; steam rigs 5000 to 7500 feet $25,000.

Assessors say they have no alternative but to evaluate all property equally under the law. Bernard L. Tighe, Jr., attorney for the drilling contractors, protested that the Mississippi rates are higher than assessments which have been in force and that the minimum rates are higher than the maximum rates in any other states. Among the maximum assessments per rig cited were Arkansas, $10,000; Colorado, $13,000; Illinois, $7500; Louisiana, $15,000; Kansas, $18,000; Wyoming, not over $20,000 on new rigs; Oklahoma, $16,000, and Texas $15,000.

War's Oil Needs Not Upped By Russia's Declaration

Russia's entry into the war against Japan created no stir in PAW last week, where it was said Soviet military operations would have little effect upon the total oil requirements of the United Nations.

On the basis of operations as then planned, requirements called for production of 7,200,000 barrels daily of petroleum liquids from the United Nations, exclusive of the Soviet Union, for the remainder of this year, and 7,400,00 barrels for 1946, it was disclosed by Deputy Administrator Davies.

Virtually no products are being shipped to the Soviet's European ports, Davies said, but a "modest," unspecified quantity has been delivered to the Pacific Coast for transportation to Siberia on Russian ships.

West Pampa Group Seeks Order for Gas Injection

Plans for an extensive repressuring program from the West Pampa Area were outlined at a hearing before the Texas Railroad Commission last week, when representatives of the West Pampa Repressuring Association asked for special rules which would permit the operation of the program as a cooperative effort.

While operators in the area have joined in an association, the area has not been unitized. They propose to pool gas from different leases to be assigned to injection wells.

In the beginning there will be 70 injection wells, about one for each 160 acres, and about 100,000 cubic feet per well daily will be injected.

Eventually, there will be three or four injection wells on each quarter section and then volumes will be stepped up.

Atomic Energy, Developed for War, Has Great Potentialities for All Industry

The atomic bomb, ace in the hole behind the ultimatum issued in Potsdam, and last week used successfully by American Air Forces over Japanese cities, is so important in its postwar possibilities that President Truman will recommend to Congress the establishment of a commission to control its production and use within the United States.

The proposed federal control of atomic-energy production and use will be mapped out by a committee presided over by Secretary of War Stimson and including Secretary of State Byrnes, former Undersecretary of the Navy Ralph A. Bard, assistant Secretary of State William L. Clayton, Dr. Vannevar Bush, director of the Office of Scientific Research and Development and president of Carnegie Institution of Washington; Dr. James B. Conant, chairman of the National Defense Research Committee and president of Harvard University; Dr. Karl T. Compton of the Office of Scientific Research and Development, president of Massachusetts Institute of Technology; and George L. Harrison, special consultant to the Secretary of War and president of New York Life Insurance Company.

Both the President and the Secretary of War emphasized the war development may prove a great peacetime boon, although both admitted years of research probably will be required to harness it.

Until the energy inherent in the atom can be controlled, it will remain a destructive force only. While it is reasonable to accept atom-smashing as assurance of unlimited power, it is fantastic to calculate its industrial uses, or do more than to speculate on them now. Even the rash predictions of a workless utopia for mankind are minus the time prediction. For that reason the warnings that have come along with this outstanding scientific achievement do not justify the apprehension as to existing power sources, oil included. Nothing that came out of releasing the fury of the atom over a Japanese city can be interpreted with such certainty.

Scientists who brought the atomic bomb into existence recognize the difficulties of turning it to peaceful uses. Smashing the atom has been the program of hundreds of laboratories. Physicists have for years recognized the power that awaited the accomplishment. Finally under the urge of war, the marshalling of men and the expenditure of $2 billion it came about. But the lag between knowledge and accomplishment was of such duration that science can be pardoned if an even longer period elapses before men learn how to release this tremendous energy so that it can be used for driving automobiles, trains and ships and for turning lathes and heating homes.

How to Harness Energy?

Energy of staggering magnitude is available. How to harness it is a question far higher on the scale than the $64 inquiry.

In newspaper releases the first atomic bomb was credited with explosive force surpassing that in 20,000 tons of TNT. Later it appeared this may have been an exaggeration. One pound is reported to be calculated to equal 6000 barrels of fuel oil in heat content (and the pound will cost five times as much as the fuel oil). In power the comparisons are bewildering but they do permit an appreciation of what science now faces. Fuel oil can be put in ships' bunkers or industrial tankage, where with the aid of pumps, piping and valves it can be used as needed.

It will require more than tanks, pumps, piping and valves to contain and control atomic energy so it can be called upon as man needs heat, light and power.

That mankind has been given a source of unlimited energy is accepted. How and when he will use it defy prediction. Meanwhile the obligation of finding and producing oil is commanding. It will be helpful if atomic energy relieves the fear of those who anticipate exhaustion of oil.

Basis of the atomic bomb is uranium. Total United States output of uranium and vanadium, reported together by the Bureau of Mines, was 13,070 tons in 1925, 96,779 tons in 1940 and 136,730 tons in 1941, the latest year for which figures are available. Steps have been taken, the War Department said, to assure us of adequate supplies of this mineral.

In discussing the atomic bomb, M. W. Kellogg, president of The M. W. Kellogg Company and also of the subsidiary, Kellex Corporation, responsible for designing one of the major plants at Oak Ridge, Tennessee, emphasized the nation's debt to American industry and the engineering profession as a whole.

"The success of this undertaking," he declared, "is a tribute to the technical and administrative excellence of the Army personnel and to the soundness of American industrial engineering.

"The successful application of this new atomic principle opens up impressive and constructive vistas in a world of peace."

Basic Power of German Industry Remains Strong

Despite Allied bombing of her chemical industries during 1944, Germany was able to continue the production of synthetic oil to some extent—could have produced more but for the necessity of sacrifices to maintain the output of powder and explosives, it was disclosed August 7 by the official report of the Reichsministry for Armaments and War Production, captured from German files last spring.

The report was made public by Chairman Harley M. Kilgore of the Senate subcommittee on war mobilization, as showing that while the military defeat of Germany was hastened by the destruction of a few key industries, particularly synthetic oil, and by the smashing of the transportation system, the basic power of Germany industry remains a dangerous potential which must be neutralized.

In official reports designed for perusal by Hitler, the extent of the damage caused the oil industry by Allied bombing was glossed over.

"The chemical industry has been the main objective of enemy air attack since May," it stated. "Every effort was made to repair and rebuild the plants which had been damaged. In spite of air raid damage we succeeded to some extent in continuing the production of synthetic oil.

"The most urgent requirements of the armed forces and of the civilian population for aviation spirit, motor fuel and Diesel oil have been made up to the present by the output of finished products and by withdrawals from reserves."

Nearly 700 New Tankers Built Since War Started

Fifteen tankers were delivered by American shipyards in July out of 97 vessels completed, the first time since November, 1942, that the monthly total dropped below 100, the Maritime Commission reported.

During the first six months of 1945 tanker vessel construction was at the rate of approximately 200 units per year, the same rate at which they were built during 1943 and 1944. American shipyards have produced 689 tanker vessels since the beginning of the war in Europe (September, 1939 to July 1, 1945).

The 689 vessels total 6,837,117 tons gross, or 10,873,860 deadweight tons and 4,952,580 total horsepower. Wartime losses of American flag tankers amounted to 112 vessels, or 1,425,000 deadweight tons.

In September, 1939, there were 366 oceangoing tankers registered under the American flag, of 2000 gross tons or more each. On July 1, we had 868 in service, or about 65 percent of the world tanker fleet now in existence. An additional 76 tankers (820,500 deadweight tons) are owned by American interests but registered under the flags of other nations, chiefly Panama. Sixty-eight large tankers, of an aggregate 1,00,000 deadweight tons, are under construction in American yards and will be completed during the current year, making a grand total of 1012 vessels in the U. S. fleet, as of the end of this year.

Approximately 600 tankers (6,800,000 deadweight tons) have been lost by the United Nations as a result of enemy action, out of a total prewar world fleet of 1507 vessels. At the end of 1945 the world total will amount to approximately 1650 vessels.

German Oil Industry Secrets to Be Made Available Through PIWC Group

Secrets of the German oil industry, closely guarded for years, will be made available immediately to the domestic industry, on a restricted basis, and eventually to all interested oilmen for the improvement of civilian products, it was announced August 6 by PAW.

Announcement of the government's plans was followed immediately by a statement by William R. Boyd, Jr., chairman of the PIWC, that it will undertake the gigantic job of unscrambling the original German oil formulas and methods for such immediate application as can be made in war plants.

Gathered by Special Mission

The material which federal and industry scientists will use was gathered by a mission of technological experts sent to Europe under PAW auspices last year. It is being microfilmed for release through PIWC's technical advisory committee.

The records are still classified as restricted material, Deputy Administrator Davies explained, and therefore cannot be distributed except on a restricted basis to firms that can make use of them in furthering the war program. Eventually, however, he said, the technical data will be freely available.

"Although it is too early to make a comprehensive forecast," Davies said, "a preliminary survey indicates that the Germans had not developed anything revolutionary in fuels or petroleum products that can be put to immediate use.

"Several Improvements"

"However, their laboratory techniques had been developed to a high degree through extensive research and have revealed several improvements, which will increase accuracy and save considerable time in refining operations.

"For example," Davies said, "the Germans had developed a better method in olefin determination than the one now commonly used in the United States, one which will save several hours in processes used daily in almost every refinery in the country.

"Since 1938, the Germans had been using a method of quantitative nitrogen analysis that in certain phases of refining operations is superior to ours. The German document outlining the process was marked 'secret,' and to our knowledge had never been published in German technical magazines."

Davies predicted that the long-range value of the captured documents will be considerable, and they are expected to play an important part in conserving our oil resources as well as improving methods in many phases of petroleum production generally.

To carry out its part of the assignment, Boyd disclosed that the technical advisory committee will organize the necessary number of teams of expert technologists to translate, analyze and abstract more than 10 million microfilm pictures.

Skill Plus "Know-How"

To speed up the work of selecting developments or methods which will prove of value in the war effort, TAC will distribute indices of the microfilms as they are received among PAW-approved operators, even before the information has been translated from the German. A workable summary of the precise processes will be distributed to those who can use them in the war effort.

"While weighing Germany's most modern petroleum refinements for Pacific war purposes," Boyd explained, "American technologists likewise will seek to ascertain how the adoption of the captured enemy processes might aid in the betterment of civilian gasoline and petroleum products in this country. They will proceed on the theory that somewhere in the Nazi secrets will be found ways and means of combining German scientific skill with American 'know-how' to not only speed up the end of the war but to produce also larger quantities and better qualities for civilian petroleum requirements."

Petroleum Totals Huge In Conquering Germany

PAW last week disclosed that the United Nations' armed forces, exclusive of those of the Soviet Union, required 22 billion gallons of petroleum products to conquer Germany.

This total covered European operations from the time of Pearl Harbor until V-E day, including the very small quantity used by European civilians, but does not include the Navy special fuel oil, 7-0-2 diesel fuel oil or 100-octane aviation gasoline required to deliver men, material and places to the scenes of action. Approximately 30 percent was 80-octane gasoline, 24 percent fuel oil, 18 percent aviation gasoline and the remainder lubricants, kerosine, diesel, heating and process oils.

Average delivery during the period of the war was 14,100,000 gallons daily, while from D day until Germany's surrender the Army Transportation Corps delivered an average of 5 million gallons daily of gasoline, oil and lubricants to depots and air bases on the continent.

Total production of 100-octane aviation gasoline throughout the United Nations up to this month was 20 billion gallons, PAW said. No estimate has been made, however, of the consumption in the bombing raids on Europe.

Truman Asks WPB to Lift Controls Soon as Feasible

President Truman last week told War Production Board Chairman J. A. Krug that all wartime production controls should be lifted "as soon as they are no longer needed," and instructed him to put the same vigor behind reconversion as was shown in gearing the industry for war.

The President's letter of instructions to Krug resolved, without specific reference, a controversy between the WPB and the Office of Price Administration, which had complained that the board's action in throwing on the market materials no longer needed for war was endangering its stabilization program.

In his letter, Truman said that production of materials which are in short supply should be expanded as quickly as possible and, until that is done, limitations should be imposed on the manufacture of products from such material and a board and effective control of inventories should be set up to prevent speculative hoarding.

"Every opportunity must be given to private business to exercise its ingenuity and forcefulness in speeding the resumption of civilian production, subject to war needs," the President said. "The government has a major responsibility to assist in the achievement of an orderly transition from war production to civilian production."

The WPB, he said, can and should play an important role in reconversion and, to help industry obtain an "unprecedented civilian production." It "should continue, for the present, some of the effective methods it adopted to achieve our unprecedented war production. These controls, however, should be lifted as soon as they are no longer needed."

Caribbean Petroleum Company Changes Are Announced

J. H. Loudon has been elected president of Caribbean Petroleum Company, an associate within the Royal-Dutch Shell Group and one of the larger oil poducing companies in Venezulea. At the same time, election of H. Wilkinson as chairman of the board was announced by the directors of the company. Both of these officials have had long experience with the Royal-Dutch Shell Group interests, both here and abroad.

Wage Control Order Covers Lea County Shops

The National War Labor Board last week brought all shops engaged in welding work in the oil well servicing industry in Lea County, New Mexico, under wage controls regardless of the number of workers employed. Regional officials at Denver ruled that this was necessary to maintain stabilized wage conditions in the industry in that area.

FEA Insists on Going Through With Fuel Oil-Linseed Deal With Argentina

Doggedly determined to go through with the much criticised trade with Argentina, contemplating the supply to that country of a considerable volume of fuel oil in return for an equivalent value, on a heat basis, of flaxseed and linseed oil and cake, the Foreign Economic Administration disclosed last week that Caribbean oil is moving at the rate of about 40,000 tons a month.

Deliveries began in May, and it is planned to ship 235,000 tons by the end of this year, with FEA to receive in return 133,000 tons of flaxseed, 88,000 tons of linseed oil and 179,000 tons of cake and meal, a total of 400,000 tons.

"In view of the critical need for vegetable oils," FEA announced August 8, "Every effort wil be made to deliver the quantities of fuel oil called for by the agreement."

"Further, it was disclosed, a similar deal has been made for the purchase of Argentina's 1945-46 production of flaxseed and linseed oil. The barter agreement has been carried out through the U. S. Commercial Company, and the Argentine products are going to Europe for human and animal feeding.

In this way, it was explained, products which were being burned in Argentina will be translated into food in Europe, easing the drain on domestic supplies and releasing them for prosecution of the war against Japan.

No gasoline will be supplied.

"The fuel oil is not of the type used in domestic oil burners. It is a heavy residual oil suitable for ships bunkers or for use under boilers in industrial plants. It will be supplied from the Caribbean area. None will come from the United States nor will United States civilian or military supplies be reduced. The fuel oil in question will be supplied from amounts that had been made available for other less essential foreign uses. The great bulk of the oil will be transported in Argentine tankers. Approximately 10 percent will be carried in United Maritime Authority tankers and another 10 percent will be carried in UMA dry-cargo vessels.

"Under the agreement, the fuel oil made available to Argentina is purchased at market price by the Argentine government. The Argentine vegetable oil and seed products are sold to the U. S. Commercial Company at prices set forth in the agreement. The quantities of the various commodities that come to the United States are recommended by the combined food boards. They are imported by the U. S. Commercial Company and distributed under direction of the Department of Agriculture."

Texas Commissioner Bitter Because Pipe Line Refused

Railroad Commission Chairman Olin Culberson last week blasted Washington authorities who block the proposed oil pipe line from West Texas to the Pacific Coast, the construction of a steel plant at Daingerfield, Texas, and the completion of a chemical plant at Rusk, Texas. Concerning the pipeline, Commissioner Culberson said:

"Never in my experience have I ever witnessed such brazen effrontery of monopolistic greed.

"Those in authority in such matters in Washington, many of whom are dollar-a-year men on leave from the organizations which they represent, invariably rule against extending any consideration to those rugged individuals and groups who seek to make their contributions toward winning the war by proposing to enter into the competitive field of business controlled by monopolistic groups.

"This does not only obtain in connection with the attempt by an independent group to build a pipe line to California, but it is present in practically all other lines of activity where in the interests of large entrenched groups are concerned.

"An outstanding and glaring example of this is the recent action of shutting down the construction of the Daingerfield steel plant and the chemical and iron plant at Rusk, Texas."

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED August 11	August 4
Alabama	950	1,000
Arkansas	80,050	79,550
California	948,200	951,500
Colorado	12,100	12,150
Florida	200	200
Illinois	203,800	204,000
Indiana	13,450	13,300
Kansas	268,250	257,550
Kentucky	29,550	29,950
Louisiana	366,200	366,100
North Louisiana	70,500	70,400
South Louisiana	295,700	295,700
Michigan	48,500	47,700
Mississippi	52,850	52,750
Missouri	100	100
Montana	21,905	23,585
Nebraska	850	850
New Mexico	103,700	103,700
New York	13,900	13,200
Ohio	6,500	6,450
Oklahoma	391,000	390,850
Pennsylvania	37,050	35,600
Tennessee	35	35
Texas	2,222,700	2,222,700
Upper Gulf Coast	567,650	567,650
East Texas Field	380,950	380,950
Rest of Eastern Texas	145,600	145,600
Lower Gulf Coast	255,650	255,650
Southwest Texas	83,850	83,850
South Central Texas	21,600	21,600
West Texas	526,600	526,600
North Texas	152,800	152,800
Panhandle	88,000	88,000
West Virginia	8,250	8,000
Wyoming	112,050	114,650
Total United States	4,942,140	4,935,470

Cabinet Status of Ickes Holds Up Oil Agreement

Uncertainty of Secretary Ickes as to his status as a cabinet member has pushed back the negotiation of the revised Anglo-American petroleum agreement, slated to begin in London this month.

His first days after his return to Washington from Potsdam concerned with the Japanese situation, President Truman is expected to deal with his Interior Secretary's demand for a showdown when he has a breathing spell.

On his desk, reportedly, are widely varying views on the retention of last serving member of President Roosevelt's original cabinet. There is considerable sentiment against keeping Ickes in the cabinet, allegedly from the oil industry which views his recent position on tidelands oil and the Cerritos channel with suspicion. Against this, a number of western senators have visited the White House to give Ickes their support, taking the position that he has done much for the West.

Most frequently discussed successor to Ickes, if one is immediately necessary, is Senator Joseph C. O'Mahoney of Wyoming who, however, reportedly prefers to remain the the Senate. On the other hand, Edwin Pauley, American representative on the reparations commission, is understood to insist that an oil man head the department. Pauley is expected to return to Washington next month, which may or may not be too late to permit him to intervene personally.

In the event that Ickes' demand for a showdown brings acceptance of his resignation, it is generally believed now that PAW will be split from the department and turned over the Deputy Administrator Ralph K. Davies.

Men close to Davies have said he would not stay in his job if a new secretary was given authority over PAW, and its continuance as part of the department also is expected to bring protests from the industry that the administration is looking toward postwar government offical might be tempted to string it out over a longer period.

Since the job of PAW from now on will be one of dismantling the war structure there is good argument for making it independent. Davies, it is believed, could liquidate the organization within a few months, whereas a regular government offical might be tempted to string it out over a longer period.

Meanwhile, the new British government is getting additional time for study of the provisions of the petroleum agreement, and it is possible that several weeks will elapse before the United States mission goes to London for personal talks.

New Texas Wells

Permits to drill 185 new wells in Texas were approved by the Railroad Commission last week There were 47 in Southwest Texas, 40 in West Texas and 37 in North Texas.

Tax Review

A Regular Feature of THE OIL WEEKLY

By WILLIAM O. TAYLOR*

This column is designed to review legislation, judicial decisions, administrative rulings and policies, and topics which are of current interest to the oil industry, from a tax viewpoint. It will be published as frequently as new developments seem to require.

Personal Holding Company Provisions As Applied to the Oil Industry.

THE filing, by the taxpayer, of a petition for certiorari in *Commissioner v. Clarion Oil Company,* — F(2d) —, highlights a tax provision which applies infrequently in the oil business but which is drastic, if applicable. The case involves the personal holding company provision (Sec. 500 et seq., IRC), which was an outgrowth of the government's attempt, some ten years ago, to place a prohibitive tax on "incorporated pocketbooks." The rate of tax is as high as 85 percent. The tax applies only to corporations and only to such corporations as are "personal holding companies" as defined by law. Whether a corporation is a personal holding company depends upon two tests: (1) stock ownership and (2) the character of its income. Both tests must be fulfilled if the corporation is to be taxed as a personal holding company. As will appear below, a corporation may be a personal holding company in one year and not so in the following year.

The stock ownership test is fulfilled if, during the last half of a taxable year, more than 50 percent in value of the corporations stock is owned, directly or indirectly, by not more than five persons. In applying this test, stock in a corporation which is owned by another corporation, a partnership or a trust is treated as being owned by the shareholders, partners or beneficiaries, as the case may be. Likewise, a person is treated as owning any stock owned by his or her spouse, brothers and sisters, ancestors or lineal descendants. Also a person or corporation is treated as owning any stock which he or it has an option to acquire.

The income test is fulfilled if, during the year, 80 percent or more of the corporations gross income is "personal holding company income," as defined in the statute. But if a corporation is a personal holding company in any particular year, the income test is fulfilled in the following years if 70 percent of its gross income is personal holding company income, except under certain circumstances. It is most important, then, to know what constitutes personal holding company income.

Definition of Income

In addition to a few kinds of income not likely to be encountered in the oil industry, the following are included in the definition of personal holding company income: dividends, interest, gains from sale or exchange of stock or securities, rents and mineral, oil or gas royalties. Rental income is not included, however, if it constitutes more than 50 percent of the corporation's gross income; and it follows, of course, that in such case the corporation could not be a personal holding company, for all the remainder of its gross income, even if it were personal holding company income of some other class, would not amount to the required 70 percent or 80 percent. Mineral, oil or gas royalties are not classed as personal holding company income unless they constitute 50 percent or more of the corporation's gross income, and will not, even then, be so classed if the expenses of the corporation which are deductible under Sec. 23(a) of the code (excluding salaries paid to shareholders) amount to 15 percent or more of its gross income. It is well to note that Sec. 23(a) does not include depreciation, depletion, taxes, interest paid, casualty losses or bad debts, as well as other deductions for which there are special statutory provisions.

In the *Clarion Oil Company* case, mentioned above, the owner of a mineral lease assigned it to another for cash and an over-ride. The government, relying on the well established rule that the cash received in such circumstances is subject to depletion because it is, in effect, an advance royalty, claimed that the cash was likewise "royalty" as that word is used in the personal holding company provisions. This contention was upheld by the court, and it is that decision which the Supreme Court is asked to review. The Tax Court had held otherwise in its decision in the *Clarion* case, and had likewise held to the contrary in J. Howard Porter, 42 BTA 681.

The government's regulations provide that the word "royalty" as used in the personal holding company statute, does not include an "over-riding royalty," which latter term is defined by the regulations to mean "amounts received from the sublease by the *operating company which originally leased and developed the natural resource* . . . . ." with respect to which the over-ride was retained. It should be noted that this definition of over-riding royalty is not at all identical with the meaning attached to the term by customary usage in the oil industry. The requirement that the royalty be received by an operating company has been upheld. *Pacific Gas & Fuel Co.,* 47 BTA 15, but in the same case the requirement that the recipient of the over-riding royalty must originally have developed the property was apparently ignored.

In *Kiesau Petroleum Corporation,* 42 BTA 69, the taxpayer furnished certain equipment for oil wells in return for an interest in production, the interest being reduced after the cost of the equipment was recovered but continuing for the entire productive life of the well. The taxpayer was required to pay, out of production, a flat amount per month as an operating charge. The Board of Tax Appeals held that the interest of the taxpayer was not a "royalty" for purposes of the personal holding company provisions. The decision was based principally on (1) the fact that such interests were commonly called "participating interests" rather than royalties in California, where the transaction occurred, and (2) dictionary definition of "royalty" which, in general, define the term as an interest retained by a former owner when he disposed of the property. The decision does not seem particularly well reasoned.

In *I.T. 3401 (C.B. 1940-2, p. 166)* the government ruled that delay rentals are personal holding company income if they constitute less than 50 percent of the corporation's income. Although there is no published ruling on the question, the government takes the position that where a lessor, in addition to a share in gross production, retains a share in net profits, the annual amounts received under the net profit provisions is in the nature of rent. Doubtless, it would be contended that income of this type is personal holding company income.

In *Plow Realty Company,* 4 TC 600, the taxpayer, who was the owner of certain land in fee, sold non-participating 20-year royalty interests. The government contended this was a sale of stock or securities, relying on its own regulations under the personal holding company statute which define "stocks or securities" to include "certificates of interest or participation in any oil, gas or other mineral royalty or lease," and on the fact that such interests have been held by both the Texas Supreme Court and the United States Supreme Court to be included in the phrase "stocks and securities" as used in state and federal statutes regulating the sale thereof. The Tax Court, however, held that the phrase should be treated as having a different meaning in the revenue law and, citing Texas cases to that effect, held that the transaction amounted to a sale of an interest in minerals in place and that the income therefrom was not personal holding company income. The Tax Court's decision was not appealed.

Any closely held corporation which has a substantial amount of income derived from sources referred to above would do well to consider carefully whether it may be a personal holding company under the provisions of the Internal Revenue Code.

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Reserves Increase Cited By Standard of California

Despite unprecedented production requirements, Standard Oil Company of California has increased its domestic reserves in the first half of 1945.

Standard's unusual record was commented upon by President H. D. Collier at a board meeting, in which a 50-cent per share dividend was declared for the second quarter.

Collier said Standard of California and its domestic subsidiaries operated more than 100 strings of tools in June and had a gross production in that month which amounted to more than 225,000 barrels per day. This represents more than 4.6 percent of production in the United States for that month. Nearly 1/5 of this oil was produced outside California.

* The author is a member of the firm of Butler, Binion, Rice & Cook.

Crude Runs to Stills Show Increase; Gasoline, Fuel Oil Output Declines

The reappraisal of the need for petroleum products for the armed forces since V-E day, announced by the Petroleum Administration for War early in July, calling for slowing down of the 100-octane aviation gasoline program while sharply stepping up the production of diesel fuel oil and other products, is showing up in manufacturing and marketing trends. For the week ending August 4, crude runs to stills showed substantial increase, with production and stocks of gasoil and distillate gaining in proportion. Gasoline production dropped, as did the output of residual fuel oil.

With the exception of gasoline, however, stocks of all other products including crude, distillate and residual fuel, showed increases.

Daily crude oil production was 8000 barrels below the week ending July 28.

Several weeks ago PAW announced that procurement of additional oil supplies from foreign sources supplemented by domestic oil would permit refineries in the Midwestern states to cut production of Navy diesel fuel oil to 30,000 barrels a day and devote that capacity to building up home heating oil stocks. It was hoped this would permit the same allowance for home-heating oil as was in effect last year without involving replacement of kerosine and distillate from uneconomical sources.

Attempts are being made to build up stocks of these heating oils as indicated in the gain in stocks of residual fuels this week. Overall-stocks of kerosine and fuel oil are not available in great volume, it is emphasized, and people depending upon oil to heat their homes and places of business this winter can count on no more oil than was allotted last winter. The availability of crude oil and also the change in transportation of oil and petroleum products to the East Coast states during the redeployment period are both responsible.

The military demand for various grades of fuel, kerosine, gasoline, and other products is determined in advance, of course.

It is pointed out that the need for fuel oil in the war probably will reach its peak during the winter when the demand for this same product at home will be at its maximum, meaning that stocks of residual fuel will continue to drop, probably considerably lower than the present decrease of 24.7 percent as compared with a year ago.

The entry of Russia into the war with Japan probably will not have a direct effect on our oil supply, since that country probably has enough supplies of her own to meet all needs. However, it might be necessary to provide her with some oil should the war be prolonged and an intensive air campaign develop on the Russo-Japanese front.

Figures as of August 4, compared to a year ago were as follows: Crude oil production, 4,922,100 barrels against 4,650,650 barrels; crude runs, 5,077,000 barrels and 4,522,000 barrels; gasoline production, 16,053,000 barrels and 14,219,000 barrels; civilian grade stocks of gasoline, 46,251,000 barrels and 43,149,000; military and other stocks, 38,561,000 barrels and 36,261,000 barrels; gas oil production, 4,758,000 barrels and 4,822,000 barrels; gas oil stocks, 36,721,000 barrels and 38,951,000 barrels; residual fuel production, 9,451,000 barrels and 8,285,000 barrels; residual fuel stocks, 42,842,000 barrels and 56,885,000 barrels.

Sinclair Boosts Prices

Sinclair Prairie Oil Company has announced that effective at 7 a.m., August 12, it was advancing its crude oil prices in the Abell Ordovician pool of Pecos County, West Texas, 13 cents per barrel. The new price for crude below 25 gravity will be 93 cents with a 2-cent differential increase up to $1.25 per barrel for crude of 40 gravity and above.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 8
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	4,762	9–30	4,798	12–30	240,992	1– 1	89,162	4– 1	48,863	10–28	64,744	10– 7
1945	[1]4,944	7–14	[1]5,077	8– 4	224,079	6– 2	99,012	3–24	38,298	1– 6	56,074	1– 6
Lows:												
1939	[3]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 3
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–13
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–18	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	220,258	9– 9	76,302	1– 1	30,232	4–19	49,737	3–18
1945	4,678	1– 6	4,656	1– 6	216,355	7–14	84,812	8– 4	26,483	3–17	38,548	5–26

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,380
January 29	4,400	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,018	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,342	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,430	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 2	4,859	4,804	224,079	15,317	88,696	4,857	29,819	9,437	39,022
June 9	4,853	4,827	221,552	15,256	87,896	4,842	30,339	9,382	38,996
June 16	4,888	4,915	221,932	15,132	87,504	5,342	30,397	9,252	39,482
June 23	4,898	5,002	220,974	15,367	87,462	5,014	31,761	9,558	39,893
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 7	4,886	[1]5,006	217,250	15,082	86,329	4,875	33,667	9,238	40,754
July 14	[1]4,944	4,945	[4]216,355	15,349	85,401	5,197	34,804	9,337	41,489
July 21	4,944	4,927	218,108	15,430	85,930	5,090	35,458	9,071	42,480
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 4, 1945	**4,922**	**5,077**	.....	**16,053**	**84,812**	**4,758**	**36,721**	**9,451**	**42,842**
August 5, 1944	4,651	4,522	[5]225,112	14,219	79,410	4,822	38,951	8,285	56,885
Change:									
In week	—8	+81	+399	—53	—1,196	+160	+650	—135	+559
In year	+271	+555	—6,605	+1,834	+5,402	—64	—2,230	+1,166	—14,043
In year	+5.8%	+12.3%	—2.9%	+12.9%	+6.8%	—1.3%	—5.7%	+14.1%	—24.7%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, July 29, 1944.

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1. Easy to stab and cannot be cross threaded.
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5. Can be broken out and rerun with no rejections from galling or other injuries short of accidental denting.
6. Fluid seal protected by extending reinforcing ring.

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100%—Pipe will collapse from external pressure or will expand beyond yield point from internal pressure without leakage at the joint; even when the pipe is subjected to heavy loads in bending or tension.

STREAMLINED

(Advantages over threaded and coupled)

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3. Requires less pressure, after setting, to "break circulation."
4. Smoother flow of cement and, therefore, greater certainty of a good job of cementing.
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On account of very high torsional strength this joint is ideal for use in washing over stuck pipe and may be run and rerun many times.

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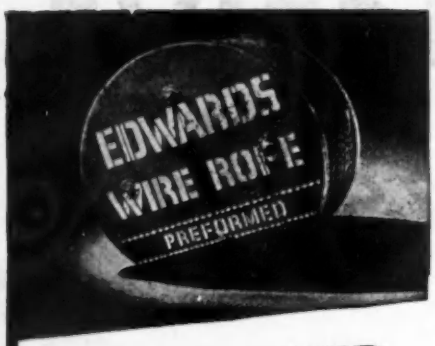

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V-J Day to Bring Cut in California Production, Earnings, Operators Say

Due to wartime expansion of California drilling and producing operations to abnormally high levels, a very drastic cutback in crude oil production is likely when the war with Japan is over. This will curtail company earnings, and probably will result in a considerable reduction of drilling expenditures. Likewise, the purchase of producing equipment, such as pumping materials, is in prospect.

These thoughts are offered by California operators in response to an inquiry on postwar conditions addressed them by THE OIL WEEKLY. (A similar inquiry was addressed to a number of operators in other regions, and will be discussed in the next issue of THE OIL WEEKLY.)

The following statistics dealing with California operations are self-explanatory:

Drilling and Production Statistics—California

	1945 (Jan.-Apr. Inc.)	1944	1943	1942	1941	1940
Wells Drilled	778	2038	1419	812	1120	1046
Wells Completed....	660	1723	1163	569	941	890
Wildcats Drilled	94	294	198	169	165	104
Wildcats Completed.	10	21	13	5	8	6
Daily Production....902,145		852,046	776,752	677,073	627,645	608,700

These figures reflect a tremendous activity, entirely abnormal when compared with prewar years.

California is now producing approximately 950,000 barrels of oil per day, with natural gasoline production bringing the total to more than a million barrels per day. In the heyday of California's peacetime production, with unlimited exports to both the East Coast and the Pacific Basin markets, the requirements were only around 675,000 barrels per day.

"It is difficult," writes one California executive whose communication on this subject was clear-cut and most interesting, "to conceive of a postwar market for Pacific Coast production much in excess of 600,000 barrels per day. A large part of this will be in direct competition with South American, South Pacific and Persian Gulf crudes in offshore markets. Let us say, for the purposes of argument, that by the termination of hostilities our production will have reached a level of 850,000 barrels per day. The end of hostilities will reduce the market to about 600,000 barrels per day, requiring the curtailment of approximately 250,000 barrels per day having a value as crude oil along of $250,000 plus what additional refinery realization may have resulted. Such a reduction amounts to $7,500,000 a month, or $76,500,000 less money per year returning to the industry on the Pacific Coast.

Retrenchment Ahead

"It seems to me inevitable that all companies in this area, therefore, must look to a period of rather sharp retrenchment. I do not believe you can take $76,000,000 a year out of industry's income without a corresponding reduction in industry's expenditures. In addition, outside capital from tax-escaping war industries will probably completely disappear. Postwar plans of my own company, for instance, which I believe is more or less typical of Pacific Coast companies, is to build during this period 'as much fat' into our operations as possible. We are drilling up our proven properties at as fast a rate as possible and have expanded our explorational wildcat program to the limit of our facilities. We are completing new wells and reconditioning old ones to put them in the best producing condition for long-life, low-operating cost for the future. We are doing this first to produce all the oil possible for the war effort and incidentally to provide 'potential cushion' for postwar retrenchment. If we are correct in our judgment we are in a position to reduce our drilling operations to 50 or even 25 percent, cut our exploration activities to fit our income and live off the accumulated potential until conditions justify a resumption of more extensive operations. With such a program, both drilling and production activities will sharply decline, with a corresponding decline of materials purchased.

Price Trends

"I do not feel competent to prognosticate the price trends in the postwar period but I do know that in the historical past severe curtailment means over-production and over-production means sloppy markets which is reflected in commodity prices. I see no reason to believe that this will not be the case in the future.

"Drilling operations, and most particularly exploratory operations, follow very closely the earnings of the companies involved. In periods of high earnings there is more money available for exploration, and vice versa. This condition is further influenced at the present time by peculiar tax situations to such a point that many companies seem to have completely lost any sense of value and are paying, as you know, fantastic prices and incurring terrific obligations for wildcat acreage which by no stretch of the imagination can be justified by normal economic standards. Examples of this are school land sales in Texas and state land leases in Louisiana. There is, likewise, an influx of outside war industry money which has turned to the oil business to escape taxation without any serious thought of return. In my opinion this situation will change very rapidly immediately following V-J Day."

Texas-Louisiana Gas Line To Be Complete in January

United Gas Pipe Line Company's 143-mile, 24-inch line from the Carthage field, Panola County, Texas, to Monroe, Louisiana, is expected to be ready for operation in January.

O. C. Whitaker Company, Houston, prime contractor on the $7,261,000 project, has made two sub-contract awards and work on the line now is under way. Sub-contractors include Associated Contractors and Engineers, Houston firm, with 48 miles, and Oscar Dempsey, Tulsa contractor, with about 45 miles.

Whitaker also is nearing completion of a 22-mile gathering system for United in the Carthage field. The system will tie into United's absorption type gasoline plant being constructed in the field.

The 24-inch line will connect with Tennessee Gas and Transmission Company's 24-inch line at Monroe, and from there will make connection with United's existing facilities in the Monroe gas field.

The line will have a capacity of 310 million cubic feet daily. It will transport for the Tennessee company a maximum of 114 million cubic feet a day from the Carthage field to the Tennessee compressor station at Monroe, and also during the war emergency period will transport a maximum of 65 million cubic feet daily for service to United's present customers.

New Arabian Corporation Plans Persian Gulf Line

A second Arabian corporation in connection with plans to build a pipe line from the Persian Gulf to the eastern end of the Mediterranean has been formed by The Texas Company and Standard Oil Company of California.

The new organization is the Trans-Arabian Pipe Line Company of Delaware with stock equally held by the two companies.

Negotiations for rights-of-way are under way, W. S. S. Rodgers, chairman of the board of The Texas Company, announced. Because of shortages of labor and materials, Rodgers said he could not predict when the line actually would be built. Financial arrangements would be determined when the line is ready for construction, he added.

The two companies also jointly own the Arabian American Oil Company which operates in Saudi Arabia.

42-Mile, 6-Inch Michigan Line Planned by Sohio

Sohio Petroleum Company has started a program to utilize both casing-head and dry (Stray sand) gas in the Coldwater field, Isabella County, Michigan, and will market gas with the Dow Chemical Company of Midland. Facilities will include a compression and desulphurizing plant in the field and a 42-mile, six-inch pipe line to Midland.

Gas will be blended in the field. An estimated 1½ million cubic feet of casing-head gas will be available for marketing. The load, expected to average up to 5 million cubic feet per day, will be made up by the addition of dry gas from the Stray sand.

Sohio officials said the program would involve about $500,000 for facilities.

Standard to Build Outlet For Galveston Bay Field

Standard Oil Company of Texas is preparing to lay 11 miles of six-inch pipe from the mainland to the Smith Point field in Galveston Bay, Chambers County. About 9½ miles of the line will be under water.

The line will originate at a central separator station in the field and run to a barge terminal now under construction on the mainland at Oak Point. This will be the first pipe line outlet for the Smith Point field. Heretofore, the oil was barged directly from the central separator station in the bay.

Republic Discontinues Its Kansas Line Connection

Republic Natural Gas Company has discontinued its pipe line connections with Northern Natural Gas Company on the Kansas side of the Hugoton gas area and hereafter will deliver gas from its own wells to the Cities Service Gas Company at its Guymon, Oklahoma, pipe line station for sale and transmission through Oklahoma.

Republic has maintained its status as a producer and gatherer of natural gas, contending its pipe lines are not common carriers. For several years it has been operating in the Guymon sector and has refused to either transmit or purchase the gas of other producers. In notifying the Oklahoma Corporation Commission of its action, Republic gave no explanation for its new policy.

Shell Awards Contract for Reconditioning Two Lines

Shell Pipe Line Corporation has awarded contract to Anderson Brothers, Houston firm, for the reconditioning of two West Texas oil lines.

The two jobs include 48½ miles of ten-inch between Rankin and Big Lake on the McCamey-Houston system, and 26 miles of six-inch line from Wasson to Westbrook station.

G. G. Griffis will be Anderson Brothers' superintendent on the two jobs.

Houston Firm to Lay Coastal Line for Glenn McCarthy

J. R. Horrigan Construction Company, Houston, has been awarded a contract by Glenn H. McCarthy to lay a natural gas line from the Winnie field, Chambers County, Texas, to the Du Pont plant at Orange, Texas.

The line will be 20 miles of 10¾-inch and 23 miles of 12¾-inch pipe. Work will begin immediately.

Texas-California Line Not War Necessity, Truman Told

The Oil Producers Agency of California has wired President Truman that the proposed oil pipe line from Monahans, Texas, to the Los Angeles refining area is not a war necessity at this late date and that steel is needed for critical war purposes.

Over the signature of Rush M. Blodget, executive vice president of the agency, the wire stated that "if the line were permitted now it would not be completed in time to aid the Pacific war, but if permitted now would have enormous advantages under income tax law, especially as to amortization."

The agency suggested that Olin Culberson of the Texas Railroad Commission be interrogated as to his willingness to see the line built under peacetime competitive conditions, particularly as relates to amortization and tax privileges.

The wire pointed out that at the close of the war California will have excess production approximating 200,000 barrels of oil daily and if the projected pipe line is constructed now under existing favorable war provisions of the revenue code, crude oil can be dumped into the state on terms demoralizing to the independent oil producers.

Empire Builds 4½ Miles of East Texas Gathering Lines

Empire Pipe Line Company is building 4½ miles of 4-inch additional gathering system in the Longview sector of the East Texas field to connect with 52 wells recently purchased by P. G. Lake, Inc., from the Joe Long Drilling Company. P. G. Lake, Inc. will gather the oil, which will be consigned to the Cities Service Oil Company. Government restrictions have been lifted on the ban against duplication of pipe line facilities, and controlled oil.

Gathering System Extended

O. C. Whitaker Company, Houston contractor, is extending the gathering system in the Venice field, Plaquemines Parish, South Louisiana, and reconditioning some existing lines in the field for the Tide Water Associated Oil Company.

Utah Line Completed

Anderson Brothers Construction Company, Houston, has completed a 24-mile, 8-inch crude oil line for the Utah Oil Refining Company in Utah. The line is from Uinta Junction near Ogden, Utah, south to Salt Lake City.

Kansas Hearing Set

Kansas State Corporation Commission has set August 24 as the date for considering market demands and to fix the state and pool allowables for the month of September.

ANNOUNCING

the formation of ASSOCIATED CONTRACTORS AND ENGINEERS, an unlimited Partnership, formed by Laurence H. Favrot, G. A. Peterkin, J. W. Sharman, Earl Allen, and A. L. Forbes, Jr., for the purpose of engaging in the following construction work:

Oil, Gas, Gasoline and Water Pipelines, and Allied Work in the Oil and Natural Gas Industry

Former Connections and Experience of the Partners:

LAURENCE H. FAVROT

President of Apex Construction Company, President of Latex Construction Company, 20 years experience in pipeline construction.

J. W. SHARMAN

Superintendent and Vice-President of Latex Construction Company, General Partner in Sharman and Allen, 13 years experience in pipeline construction.

GEORGE A. PETERKIN

Vice-President and President of Latex Construction Company, 17 years experience in pipeline construction.

EARL ALLEN

Superintendent of Latex Construction Company, General Partner in Sharman and Allen, 17 years experience in pipeline construction.

A. L. FORBES, JR.

Vice-President and General Superintendent of El Paso Natural Gas Company, Vice-President and General Manager of Pressure Weld Company, 18 years experience in engineering and pipeline construction.

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West Edmond Pool Given Southwest Extension

West Edmond pool extended 1½ miles southwest; deep McClain County wildcat doubles initial flow; Continental tests Arbuckle lime in Butterly well; Magnolia opens new area southeast of Polo; new horizon for West Davenport pool.

Oklahoma County: A 1½-mile southwest extension to the West Edmond pool was effected at Phillips Petroleum Company's Airport 1, C NE NE 8-12n-4w, which tested approximately 20 barrels of oil an hour through ¼-inch choke from the Bois d'Arc at 7191-7251 feet. A study of the area indicates the well is on a large "bulge" along the southwest section of the pool and is producing from the same common source of supply as West Edmond. The discovery is about 2½ miles northwest of Phillips' Classen 1 near Bethany, completed as a gas-distillate producer and which was considered to have opened a new area. The Airport well proves a number of locations between the Classen "discovery" and West Edmond.

McClain County: Oklahoma's deepest producer and new Anadarko Basin pool opener north of Lindsay, Cities Service Oil Company et al's Lawson 1, C SW NW 22-5n-4w, improves with testing. After being shut in for tankage it was again opened and flowed 104 barrels of oil in the first hour, 107 barrels the second, and about 100 barrels the third, or double the oil reported on initial test. Second test was made through ¾-inch choke which replaced the ½-inch choke. Prior to changing chokes the well flowed 1285 barrels in 24 hours. Total depth is 10,997 feet with casing perforated between 10,950-97 feet. Operators believe they have 50 feet of additional pay which can still be perforated. The discovery is the year's most important for the state.

Garvin County: Continental Oil Company continues testing Butterly 1, NW SW SE 14-1n-1e, wildcat 2½ miles northeast of the Butterly gas pool and a prospective pool opener. At 4422 feet in Arbuckle lime the well swabbed 48 barrels of oil in 24 hours and 40 barrels in 13 hours. It had the lime at 4412-4422 feet. Pay zones in Garvin County have been in deep lime formations and an Arbuckle producer probably would create new interest throughout the area.

Pottawatomie County: Phillips Petroleum Company is trying for a gasser at Bourassa 2, NW SE NE 21-6n-3e, Wanette area. After perforating in Layton sand at 2911-28 feet, crews were cleaning out for production test. On a drill-stem test of the same zone the well showed for about 4½ million cubic feet of gas daily. L. B. Jackson et al's Rose 1, NW SE NE 26-11n-2e, logged an oil show in Simpson dolomite at 5765 feet and a show in the Wilcox at 5805 feet. Core between 5807-11 feet recovered 4½ feet of saturated sand. Hole was being reconditioned for additional testing.

Noble County: Magnolia Petroleum Company has a pool-opener a mile southeast of the old Polo field at Wollard 1, SW SW SW 34-22n-2w. Topping Bartlesville sand at 4620 feet and with pipe set and perforated between 4621-88 feet, the wildcat flowed 275 barrels of oil daily and has been shut in for tankage.

Lincoln County: L. B. Jackson et al's Mears 1, NE NW NW 8-14n-5e, opens a new producing horizon for the West Davenport pool. Topping Cleveland sand at 2765 feet and after setting production string perforations between 2766-93 feet resulted in 100 barrels a day natural, plus ½ million feet of gas. The well was plugged back from the Prue sand which tested about five barrels of oil daily from 3628 feet.

Cleveland County: Initial production tests are under way at O. G. Harp's Mattheson 1, NE NW NE 19-10n-2w, about 2 miles east of the Moore townsite. The wildcat has caused considerable speculation since it flowed 1325 barrels in 24 hours from the Bartlesville sand late last year and then died. Repeated tests failed to bring it back to life. Pumping unit has been installed and latest reports rate recovery at about 145 barrels of oil daily. Present zone is at 7570-7615 feet. Oil tests about 39 gravity.

Okfuskee County: Big Chief Drilling Company was preparing to test a good show in the Senora sand in the Kennedy 1, SW SE NE 4-10n-9e, east of Bearden. The test was carried to 3350 feet where the Bartlesville was dry then plugged back to the top of the Senora.

Comanche County: The Texas Company's Markle 1, NE NE NE 28-3n-9w, wildcat southeast of Sterling, was drilling below 6900 feet after recovering 450 feet of salt water and 60 feet of slightly gas-cut mud on a drill-stem test at 5798 feet.

Gas-Oil Ratio Tests

Oklahoma conservation agents are supervising gas-oil ratio tests in the West Edmond pool of Central Oklahoma. The survey was decided upon when it was found that ratios were increasing in some sections of the pool. Present limit is 2000 feet of gas per barrel but whether this ratio will be continued will depend on the outcome of the tests. Sentiment among operators is against increasing the oil-gas ratio.

Wells Completed in the United States in Week Ended August 11, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama	1	....	....	....	1	....	....	....	....	....	1	....	22	18
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	6
Arkansas	4	....	....	....	4	....	....	....	....	....	4	3	113	145
California	41	1	....	5	47	....	1	....	7	8	55	52	1,356	1,236
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	18	16
Florida	....	....	....	....	....	....	....	....	....	....	....	....	11	1
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	6	3
Illinois	19	....	....	10	29	4	2	....	5	7	40	31	1,070	1,131
Indiana	3	....	....	4	7	....	....	....	....	....	7	12	208	182
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	1	2
Kansas	10	1	1	11	23	....	....	1	9	10	33	36	1,003	1,092
Kentucky	4	....	....	4	8	....	....	....	....	....	8	28	309	449
Louisiana	7	1	....	2	10	1	....	....	5	5	16	27	612	456
North Louisiana	2	1	....	....	3	1	....	....	3	3	7	8	219	156
South Louisiana	5	....	....	2	7	....	....	....	2	2	9	19	393	300
Michigan	13	2	....	9	24	1	1	....	8	9	34	20	470	399
Mississippi	4	....	....	....	4	....	....	....	4	4	8	8	233	111
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	30	21
Montana	4	....	....	....	4	....	....	....	1	1	5	4	132	204
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	3	9
New Mexico	5	1	....	3	9	....	....	....	....	....	9	13	268	251
New York	15	....	10	....	25	....	....	....	....	....	25	25	679	774
North Carolina	....	....	....	....	....	....	....	....	1	1	1	....	....	....
Ohio	5	2	....	....	7	....	....	....	....	....	7	11	543	550
Oklahoma	17	5	....	14	36	2	....	....	8	8	46	41	1,444	1,097
Pennsylvania	27	4	15	....	46	2	....	....	....	....	48	49	1,811	1,801
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	2	9
Texas	78	18	....	27	123	....	1	....	29	30	153	139	4,464	3,681
E.Tex.Bor. Co.'s	....	1	....	....	1	....	....	....	....	....	1	3	54	17
E. Texas Field	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Rest of E. Texas	1	....	....	1	2	....	....	....	....	....	2	3	133	180
North Texas	18	....	....	12	30	....	....	....	8	8	38	39	1,053	855
W. Central Tex.	12	1	....	4	17	....	....	....	2	2	19	4	288	245
West Texas	28	1	....	2	31	....	....	....	4	4	35	26	1,120	966
Tex. Panhandle	2	11	....	1	14	....	....	....	1	1	15	21	375	158
G. Coast, Upper	9	....	....	2	11	....	1	....	9	10	21	15	435	340
G. Coast, Lower	8	4	....	2	14	....	....	....	....	....	14	19	642	580
Southwest Texas	....	....	....	3	3	....	....	....	2	2	5	7	303	274
S. Central Tex.	....	....	....	....	....	....	....	....	3	3	3	2	61	63
Utah	....	....	....	....	....	....	....	....	....	....	....	....	....	1
West Virginia	9	9	....	2	20	1	....	....	....	....	21	17	495	554
Wyoming	4	....	....	1	5	....	....	....	....	....	5	3	95	100
Total U. S.	270	44	26	92	432	11	5	1	77	83	526	519	15,398	14,298

* Includes distillate wells. † Includes salt water disposal wells.

☆ Kansas

New Orleans Firm Opens Pool Near Aldrich Field

Ness County gets pool opener; wildcat south of Feltes flows 253 barrels of oil per day; Derby test logs saturation; Finney County gasser gets 5 million cubic feet of gas daily; Benson well south of Pawnee Rock pool continues testing.

Ness County: Chalmette Petroleum Company of New Orleans, in its first Kansas venture, gave this county a new oil field about 7½ miles south and east of the Aldrich pool. Bowman 1, NW NW NE 31-19s-25w, was preparing for production test after drill-stem tests in Mississippi lime between 4553-83 feet recovered more than 800 feet of free oil. Mississippi was cut at 4551 feet and pipe was set at 4553 feet. The company controls all acreage within a 2-mile radius.

Barton County: Black-Marshall Oil Company's Ney 1, NE NE SE 8-16s-11w, pool opener a mile north of the Feltes field, is a completion at 3296 feet, total depth. The discovery pumped at the rate of 253 barrels of oil daily from Arbuckle lime at 3295-96 feet. Producing formation has good porosity and saturation and the well is considered an exceptional producer for that section of the county.

Ellis County: Two porous and saturated zones in the Lansing lime are reported at Derby Oil Company's Schumacher 1, NW C 1- 15s-17w, prospective pool opener 8 miles northeast of the Madden pool. Cutting the Lansing at 3197 feet, zones of saturation and porosity were reported between 3218-23 and 3296-3306 feet. Operator was drilling below 3542 feet, headed for the Arbuckle. A producer would open considerable new territory.

Finney County: The Atlantic Refining Company's Wright 1, SE NW NW 33-21s-34w, which opens gas production west of the Nunn area, tested 5 million cubic feet of gas after perforating and acidizing the Krider sand zone at 2600-18 feet, an increase of a million feet over previous tests. Operator considers the well a completion and is preparing to take a state potential. The well was drilled to 4915 feet, where the Mississippi lime failed to show.

Pawnee County: Stanolind Oil & Gas Company's Benson 1, NW NE NW 30-23s-15w, wildcat 19 miles south and east of the Pawnee Rock pool, was preparing to test the Lansing after recovering 14 million cubic feet of gas daily from Arbuckle lime between 4100-50 feet. Lansing was topped at 3628 feet and operator plans to perforate the pipe. The well is at 4165 feet, total depth.

Missouri

Claude McQueen et al's Ramsey 1, wildcat about 2 miles northeast of Phelps City, Atchison County, is drilling at 740 feet. It is in NW SW 30-65n-41w. Dan Short's Rankin 1-A, SE SE SE 9-65n-40w, was drilling below 1040 feet. Original hole was lost because of a fishing job and rig was skidded several feet.

Putnam County: McLaughlin Development Company has spudded in at Johnson 1, SE SW 14-65n-21w.

Platte County: In the Prairie Point gas area, Missouri Valley Gas & Oil Company completed Drennon 4, NW NE SE 7-51n-33w, for 100,000 cubic feet of gas at 500 feet, total depth.

Oklahoma Leases Acquired

N. V. Duncan, Incorporated, oil producers and drilling contractors of Fairfield, Illinois, have acquired leases in the Stroud-Davenport area of Lincoln County, Oklahoma. George F. Thomas, petroleum geologist of Tulsa, has been named Mid-Continent representative for the Duncan Interests.

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☆ West Texas

Goldsmith Field Deep Test Has Clear Fork Oil Flow

Initial deep test in Goldsmith field scores oil flow from Clear Fork (Tubb); bottom-hole water reached by 4-pay discovery in Andrews County; nearby Devonian strike makes flow; northwestern Gaines County has promise of Devonian discovery.

Ector County: Stanolind Oil & Gas Company et al's Scharbauer 3-Q, C NE SW PSL 12, Block A, offsetting 4200-foot San Andres production on the north edge of the Goldsmith field, confirmed production for the Clear Fork (Tubb) lime, entered at 5870 feet, with elevation of 3159 feet and first porosity at 6172 feet. A drill-stem test at 6148-6210 feet returned gas to the surface within 3 minutes, and the recovery consisted of 550 feet of oil and 300 feet of oil with some rotary fluid. The well headed twice in pulling stem. Additional porosity with nominal oil stain was logged at 6230-85 feet, where a drill-stem test was pending. It may not continue to Ellenburger as planned, as this new pay nullifies dry hole contributions from others.

Phillips Petroleum Company's T. P. Land Trust 1-D, southeast offset to the most southerly Devonian well in the TXL field, flowed 140 barrels of 38.3-gravity oil during the last hour of a drill-stem test at 7758-7953 feet in Devonian, topped at 7779 feet, or 30 feet high. The company's T. P. Land Trust 1-E, 1½ miles southeast and 250 feet low on the Glorietta (San Angelo), topped at 5340 feet with elevation of 3248 feet. It also correlates 100 feet low on the Yates and 160 feet low on the San Andres, leaving no doubt that the Devonian production trend terminates, or makes a sharp turn in this area.

Andres County: Magnolia Petroleum Company and Humble Oil & Refining Company's Cowden 1, previously indicated discovery, swabbed and flowed 83 barrels of 35.9-gravity oil on 17-hour test from perforations at 7940-60 feet in Devonian, topped at 7778 feet. Additional perforations were scheduled at 7920-40 feet, then higher and opposite the most effective pay.

Shell Oil Company and The Texas Company's Ratliff-Bedford 1, with 4 oil zones confirmed, was running 5½-inch pipe to bottom at 11,475 feet after establishing the water level in the Ellenburger, topped at 11,018 feet. This record depth producer for the district has in excess of 400 feet of broken pay in the Ellenburger, as a final drill-stem test at 11,427-475 feet returned gas to the surface within 33 minutes. Recovery consisted of 550 feet of mud cut with oil, gas and water; 4900 feet of sulphur water cut with oil and gas; and 550 feet of mud cut with water. It will be a predominately water-drive field. Dual completion may be attempted due to the cost.

Winkler County: Stanolind-Shell's Waddell Bros. 1, ¾ mile northwest of the Wheeler field, reached the water level in Ellenburger, topped at 10,740 feet, or 174 feet low, when a drill-stem test at 10,789-10,813 feet returned 270 feet of sulphur water. Five previous tests

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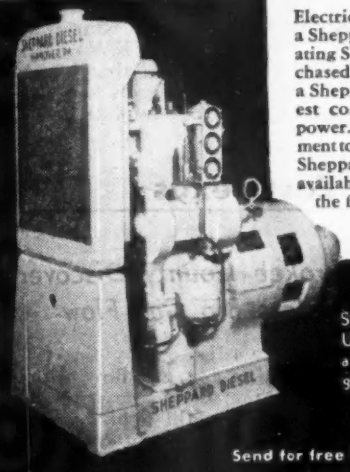

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at 10-foot intervals to 10,803 feet returned oil- and gas-cut mud, thus brightening the outlook for a commercial well, although below the regular water table.

Ward County: Shell Oil Company's Sealy-Smith 6, ½ mile north by west of Ellenburger production in the Monahans field, added a shallower Permian zone in flowing 700 barrels of oil through ¾-inch choke after acidizing perforations at 4850-5020 feet. The hole was bridged back for perforations at 4780-4840 feet, and this zone produced 180 barrels of oil on 5-hour swabbing and flowing test. The well will be completed from both perforation series.

Gaines County: Amerada Petroleum Corporation's Jones 1-A, C NW NE PSL 3, Block A-6, and 5⅓ miles north of a 12,222-foot failure, was setting 5½-inch pipe near the 11,500-foot level to complete with 2 promising oil zones. This wildcat passed up indicated production at 9090-9196 feet in the Wolfcamp, Basal Permian, and logged favorable showings and porosity in Devonian from 11,181 to 11,284 feet followed by a 96-foot section of barren lime and chert. Nominal porosity was logged at 11,380 to 11,512 feet. The well is bottomed at 11,634 feet.

Crane County: Gulf Oil Corporation's Henderson 2-E, PSL 25, Block B-27, and 3150 feet southwest of a small oil and gas discovery on the west side of the Sand Hills structure, flowed at rate of 40 barrels of oil hourly during the last 28 minutes of a drill-stem test at 4370-4445 feet in the Clear Fork (Tubb) zone. The gas volume was rated at 600,000 cubic feet daily. Seven-inch pipe was cemented at 4380 feet to complete through open hole.

The Atlantic Refining Company's University 1-A-31, indicated prolific discovery from possibly 500 feet of effective Devonian pay, was drilling Upper Ordovician at 9550 feet. The company is drilling on 3 nearby tests and was rigging up on 3 others, while work is slated to be started on the remainder of the 9 authorized followup tests, which are required to forestall November, 1946, lease expirations.

Humble's Cowden 1, 10 miles south by east, was drilling lime and chert at 6728 feet in Devonian, topped at 6035 feet with promising oil show at 6079-6170 feet. John I. Moore et al's Waddell-Southland 1, 4½ miles northeast of the McKee pool, was drilling broken saturation at 6585 feet in Devonian, topped at 5906 feet. A drill-stem test at 5979 feet and 6346 feet yielded adequate oil and gas to warrant setting pipe for production test after fulfilling the Ellenburger depth contract.

Deep Tests: Phillips Petroleum Company's Powell-Powe 1, Sect. 3, Block OW, S. M. Hoffman-T. M. Ry. Survey, Pecos County, was circulating at 12,127 feet to run electrical formation survey. It is credited with having reached its Ellenburger objective. Atlantic's Iowa Realty 1, Pecos County Ellenburger prospect 3 miles northwest of the Heiner pool, was trying to recover drill pipe lost at 6009 feet while coming out to drill-stem favorable showing in the Upper Devonian. Humble's Buchanan 1, Midland County, was drilling below the 5½-inch casing seat at 12,568 feet to establish the water level in the Ellenburger, topped at 12,170 feet, before perforating. This wildcat passed up gas-distillate near the 10,300-foot level. Humble's Means 88-X, Means field, was drilling lime at 12,672 feet, having tested sulphur water in the Devonian at 12,102-12,352 feet. Phillips Petroleum Company's McDowell-McDow 1, Glasscock County wildcat, was eliminated as an Ordovician prospect in recovering an abundance of water at 10,793-10,915 feet in Ellenburger, topped at 10,410 feet, or 86 feet high to a nearby failure. However, it will be plugged back for retest of oil flow passed up near the 7000-foot level.

Yoakum County: Hunt Oil Company's Graham 1, C NW NW Sect. 328, 5 miles northwest of the Ownby field and within a cluster of failures, was swabbing a small amount of oil after using acid at 5335 feet in San Andres, topped at 4590 feet. Gulf's Frost 1, C NW NW Sect. 35, and 3½ miles east by south of a recent Cochran County discovery, entered the San Andres at 4370 feet, by log, or 95 feet low, and was drilling lime at 4560 feet. Acreage on both sides of the county line has been in demand, with prices advancing to $110 per acre cash and an additional $100 per acre from production.

☆ North Texas

Jack County Wildcat Has Production from Bend

Jack County wildcat registers production from Bend, while earlier strike is awaiting test; eastern Cooke County deep wildcat pumper declines sharply.

Jack County: Hanlon & Buchanan, Inc.'s Mathis 1, G. W. Davis survey A-187 and 2 miles southeast of Hess, will explore the Mississippian and Ellenburger after confirming production from Bend conglomerate, topped at 4758 feet. A drill-stem test at 4752-68 feet yielded 12 barrels of free oil and 1½ barrels of rotary fluid, with shutin bottom-hole pressure calculated at 1900 pounds. This strike is 1½ miles southwest of the Matlock 2-pay pool, nearest deep area. The company's Whitsett 1, Lot 22, Sect. 2, BBB&C Ry. Survey, and 2 miles northeast of the Hoefle field, resumed drilling after testing dry in Bend saturation at 5115-36 feet. Roeser-Pendleton, Inc. and F. Kirk Johnson's McAnnally 1, pending discovery on the northeast edge of Joplin, was drilling plugs from 7-inch casing at 4430 feet to test Bend saturation to 4446 feet.

Cooke County: The Texas Company's Bulkeley 1, 2 miles east of the Walnut Bend field, pumped 19 barrels of oil and 7 barrels of water the third 24 hours, representing a sharp decline from the first day's output, which included accumulated fluid. Production is from Strawn perforations at 5038-52 feet.

Fred Snuggs - McElreath - Suggett & Neal Bros.' Almon-Sun 1, Strawn discovery 2½ miles east by north of Gainesville, was making a production test of sand at 2899-2907 feet after a drill-stem test indicated probable production of 150 to 200 barrels daily. This wildcat also logged promising pay at 2364-74 feet. Owners have made location to the northwest, while Shell Oil Company and Magnolia are to drill their acreage. Sinclair Refining Company's line crosses the lease.

Magnolia Petroleum Company's Dillard 1, northwest offset to the Sivells Bend field discovery, missed the upper pay and tested salt water in the Beasley (Strawn) zone at 6920-7021 feet. It was drilling at 7120 feet to explore the Lower Strawn.

Wilbarger County: Million Oil Company's Waggoner 1, Block 131, Waggoner Colony lands and 2¾ miles east of recent Ellenburger strike on the east side of the county, entered the Ellenburger at 4797 feet, or 48 feet high, but tested dry at 4838 feet. The test is bottomed at 4911 feet, awaiting outcome of electrical formation survey.

Archer County: R. A. King et al's Perkins 1, Lot 72, Sec. 2, KWVFL survey, and south offset to an abandoned 2-well pool, pumped 55 barrels of oil, plus 4 percent water, from sand at 1613-14 feet.

☆ East Texas

Cherokee County Discovery Registers Big Gas Flow

Woodbine discovery in Cherokee County makes big gas flow with distillate and water; Lone Star pool advanced to east; Chapel Hill field deep test has show of gas in Cotton Valley; Roger Lacy's Harrison County discovery makes 3½ barrels of oil hourly and 750,000 cubic feet of gas daily; Marion County test logs commercial shows.

Cherokee County: Tom G. Shaw et al's Bolton-Pure 1, Chas. Widgeon survey and 9 miles west of the Lone Star pool, was rated at 15 to 20 million cubic feet of gas with a spray of distillate and salt water daily after drilling plugs from 4½-inch pipe landed at 4173 feet, or 4 feet off bottom. The water is attributed to the accidental drilling of the well some 4 feet deeper in drilling out plugs. Plastic plugback operations will follow. This discovery is on the same fault trend as the Lone Star area, where Shaw et al's Bailey 2 is showing for a 933-foot east extension at 3924-32 feet. The well kicked off when plugs were drilled and tubing pressure built up to 1120 pounds while shut in for official gauge.

Humble Oil & Refining Company's Maness 1, eastern Cherokee County wildcat, failed to make commercial volume of gas from perforations at 8930-9070 feet in Travis Peak, topped at 8872 feet. Next test will be made at 8710-35 feet.

Freestone County: The Texas Company's Ham 1, Teague area, was drilling at 7585 feet, having tested additional salt water in the Rodessa at 7536-48 feet.

Navarro County: J. L. Collins & Company's Greenlee 1, 3 miles east of Eureka, was drilling shale at 6680 feet in the Rodessa series, topped at 6300 feet, with water in the upper zone.

Smith County: Sinclair Prairie Oil Company's Shofner 1, projected Smackover test for the Chapel Hill field, logged a show of gas at 11,178-11,195 feet by automatic logging truck, and was drilling shaley-sand at 11,240 feet. The show was in Cotton Valley, topped at 9774 feet by electric log, although sample call was made at 10,650 feet.

Quitman Field: Shell Oil Company's Rainwater 1, southwest extension, flowed 65 barrels of 38-gravity oil on 24-hour test through drill stem with ¼-inch surface choke from Paluxy perforations at 6166-6210 and 6142-50 feet. This

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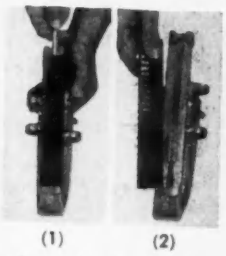

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▶ Drill collars differ from drill pipe in that their diameter is constantly changing—steadily reducing as the surface grinds against the raw fresh-cut walls of the hole directly behind the bit. On drill *pipe* this wear is usually absorbed by protectors—or at least by the tool joints—so that the pipe surface opposite the slips maintains its full diameter.

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But fixed-diameter slips that fit the collar when new (A) are unable to change curvature as the collar wears. They become steadily less and less effective (B) until finally they fail to hold and the string is lost down the hole.

▶ *Baash-Ross Drill Collar Slips are specially engineered to overcome this problem.* They are made up of many *narrow* segments flexibly hinged together so that they w-r-a-p around the collar like a chain tong, giving the same full grip whether the collar is new (C), worn (D) or even out-of-round!

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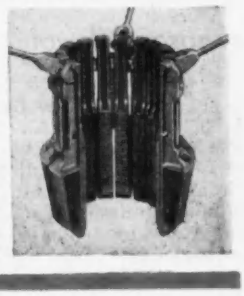


outpost was carried to the Glen Rose, topped at 6486 feet, for geological information being assembled for a future Travis Peak test.

Leon County: Shell Oil Company and Lone Star Producing Company's Tandy 1, first deep test for the Buffalo gas field, was drilling hard sand at 10,695 feet in Travis Peak, topped at 10,084 feet.

Harrison County: Rogers Lacy's J. R. Tutle et al 1, J. M. Clifton survey, 3 miles north of Marshall townsite, which was showing considerable amounts of gas and condensate, is recording a flow of 3½ barrels per hour of light green oil and an estimated 750,000 cubic feet of gas per day through ⅛-inch choke, with no salt water showing. No tankage has been erected. Lacy is reported to have reperforated around 6460 feet in the Pettit horizon, and is at 7027 feet total depth.

Lacy probably will test Mrs. E. L. Poteet 1, Betty Humphries survey, 4 miles north of Harleton. Electrical survey indicated about 25 feet of porous lime with odor and show of distillate in the Rodessa at 6800-50 feet, approximately the level of production in Whelan Bros.' Peal 1, 2½ miles northwest of Harleton.

Marion County: Jefferson Oil & Gasoline Company's J. M. DeWare, Jr. et al 1, Reuben Bennington survey, 1½ miles north of Jefferson, logged commercial shows of gas-distillate production in the Dees and Young horizons. Operators have taken out permit for 2 more locations in the area, where they have more than 4000 acres under lease. Drilling continues below 7500 feet.

Stewart's Company's Brown Estate 1, Joseph Watkins survey, wildcat 5 miles northeast of Jefferson, is drilling below 5126 feet.

Nacogdoches County: Magnolia Petroleum Company's W. L. Harrell 1, William Wray survey, is drilling below 4765 feet. A 30-minute drill-stem test from 4360-70 feet using ¼-inch chokes, recovered 1480 feet of salt water, 500 feet of gas-cut mud.

San Augustine County: M. E. Davis' C. Thomas 1, W. B. Horn survey A-142, which logged gas-cut mud at 5112-65 feet, began cutting new hole while reaming. Drilling is now below 8644 feet.

Shelby County: M. E. Davis' Pickering Lumber Company 1, W. J. Britain survey, is coring below 7006 feet with no showings indicated in present formation.

Humble Oil & Refining Company's Pickering Lumber Company, St. Francois survey, is drilling below 9763 feet in hard sand with streaks of shale still in the Cotton Valley horizon. A blowout of dry gas several weeks ago is now believed to have occurred in the Pettit lime from 6613-37 feet.

Panola County: The Carthage area continues to be the most active in East Texas, with 6 new locations staked during the week.

Arkansas Allowables Set

The Arkansas Oil & Gas Commission has set a daily allowable of 85,942 barrels of oil per day in the state's controlled fields for August, September and October. Daily allowable for May, June and July was 88,213 barrels.

The commission denied a petition to change spacing rules in the Texarkana gas-condensate field in Miller County.

☆ South Central Texas

New Wildcats Are Staked; Bexar Well Has Oil Shows

Activity in South Central Texas boosted by staking of new wildcat tests; Bexar well reports show of oil; Humble completes Imogene oiler.

Bexar County: A slight show of oil has been reported in H. A. Pagenkopf's Max Blum 1, 5000-foot test in the Gas Ridge area. The show was logged at 1630-38 feet and the test now is drilling below 3000 feet in sandy shale.

A 3200-foot wildcat test has been staked 10 miles south of San Antonio by George Parker and Charles L. McCune, San Antonio operators. The test is the T. J. Goad 1 in the J. M. Urriegas Grant.

Atascosa County: Humble Oil & Refining Company has completed a new oiler in the Imogene field. The company's H. H. Coward 7 flowed 57 barrels of oil and 500,000 cubic feet of gas daily through a 3/16-inch choke from perforations at 7647-50 feet. The gas-oil ratio was 8755/1.

Dimmit County: Calatexia Oil Company's S. E. McKnight 1, wildcat 4½ miles southwest of Carrizo Springs, has been completed as a gasser through perforations at 2640-45 feet. The flow is estimated at 500,000 cubic feet daily.

Bastrop County: H. W. Snowden of Dallas has located a wildcat 9 miles west of McDade. It is the Ada Potts 1 in the E. Standifer survey.

Medina County: A shallow cable tool wildcat has been staked by C. G. Bigby 4 miles south of Dunlay. It is the Mrs. L. S. Bader 1 in Medina County School Land Section 295. Proposed depth is 1500 feet.

Anniversary Celebrated

The First National Bank and Trust Company of Tulsa celebrated its golden anniversary July 29 as Tulsans and out-of-town visitors thronged the flower-banked lobby to congratulate the institution which has greatly contributed towards the success and development of the oil industry in the Mid-Continent area.

Heading the bank as president is R. Otis McClintock, well-known oil man who, before joining First National, was an executive with the Gypsy Oil Corporation, now the Gypsy Division of the Gulf Oil Corporation.

☆ Southwest Texas

Starr Wildcat Is Testing; Webb Has Two New Wildcats

Tests continue on Starr County wildcat; 2 wildcat locations made in Webb County; Gormac field tests abandoned; deep well planned in McMullen County.

Starr County: Testing operations are continuing at W. W. Zimmerman's F. W. Seabury 1, wildcat 12 miles north of Rio Grande City. Operator has 5½-inch casing set at 3935 feet and is testing in open hole at 3935-36 feet. The well is cleaning through a 7/64-inch choke with tubing pressure of 760 pounds and casing pressure 1200 pounds. No estimate on the fluid has been reported.

T. E. Stephens, active wildcatter in this area, has located a 4500-foot test 30 miles northwest of Rio Grande City. It is the Francisco Guerra et al 1 in Porcion 107.

East of Rio Grande City, Sun Oil Company's S. Cantu et al 1, Porciones 39 and 40, has been abandoned at 6888 feet.

Webb County: O. W. Killam will drill a 6000-foot wildcat test 13 miles northeast of Laredo. It is the L. R. Ortiz 2 in Porcion 26, Survey 2026.

Sun Oil Company will drill Isaac Hirsch et al 1 as a 7000-foot wildcat test in Survey 2030.

Duval County: The Gormac field received two setbacks with the abandonment of Gorman and McDermott's J. F. Welder 5 at 2490 feet and Humble's Duval County Ranch Company 4-J at 2484 feet.

Gorman and McDermott's J. F. Welder 4 was completed as a small pumper at 2467-71 feet.

McMullen County: Plymouth Oil Company has staked a 7500-foot wildcat test about 6 miles southwest of Callihan. The test is the Harry Ezzell 1 in Section 8 of the Hayes Ezzell subdivision.

Santa Clara Oil Company's Volney M. Brown et al 1-A, wildcat west of Whitsett, has been abandoned at 6503 feet.

☆ Lower Texas Coast

Bee County South Tulsita Field Outpost Is Testing

Outpost is testing in South Tulsita field; Magnolia completes deep well at Burnell; Humble testing wildcat well in Brooks County; Jackson County gets new wildcat.

Bee County: Efforts are being made to push the South Tulsita field about 4000 feet southward as testing operations are under way at Fred Shield, Tide Water Associated Oil Company, and Allen-Morris' A. Hartzendorf 1, George Kerr survey. Total depth is 7078 feet in the Wilcox with 5½-inch casing set on bottom. A drill-stem test at 7047-63 feet recovered 1200 feet of oil and operators are attempting completion through perforations at about 7050 feet.

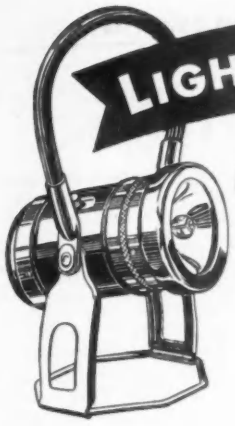
Karnes County: Magnolia Petroleum Company's Ruth Ingram 1, Burnell-Wilcox field, being deepened from 6782 feet, flowed 185 barerls of oil daily through a 5/32-inch choke from 6878-83 feet. Tubing pressure was 675 pounds and casing pressure 325 pounds with the gas-oil ratio being 850 to 1.

Brooks County: Humble Oil & Refining Company is still attempting a drill-stem test at B. A. Skipper Jr. 1, wildcat northwest of Rahcal. The last test was made at 6400-02 feet and recovered no pressure. Operator will drill out to 6440 feet and retest.

Humble's D. J. Sullivan 1-B is shut down at 10,342 feet.

Jackson County: Sterling Oil & Refining Company's J. M. Bennett 1, La Salle field, has been completed for 60 barrels of oil daily through a 5/32-inch choke from 5060-70 feet.

West of Edna, Houston Drilling Corporation located Adolph H. Miller 1, wildcat in the M. Marquez survey.



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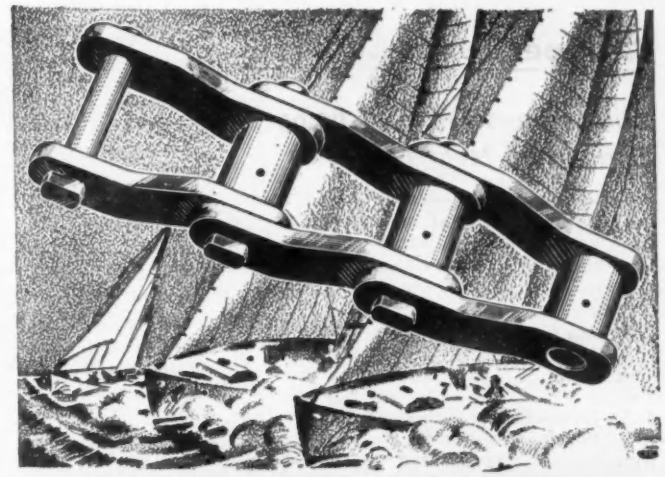

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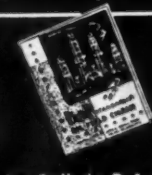

Union Bulletin O-1 covers Oilfield Chain. Ask for your copy.

UNION CHAINS

☆ Upper Texas Coast

Wilcox Sand Oil Pool Being Established Near New Ulm

Wilcox sand oil pool being established near New Ulm; first show reported in Colorado County wildcat; Columbus field being extended; East Bay City pool outpost flows oil; pipe set in Pledger outpost.

Austin County: Definite establishment of a Wilcox sand oil pool 2 miles southeast of New Ulm is seen in Sinclair Prairie Oil Company's W. A. Schweke 1-A, James Tylee survey. After drilling to 10,013 feet and setting casing on bottom, operator perforated at 9155-65 feet and tested through the drill stem. In 14 hours the well flowed 90 barrels of 35-gravity oil to indicate the first low gravity Wilcox sand pool in a normal gas and condensate producing sector. Operator now is testing in a deeper sand around 9300 feet and if this sand indicates commercial production a dual-sand completion will be made.

Colorado County: The first show of gas and distillate has been reported in Skelly Oil Company and Warren Petroleum Company's R. Hamel 1, R. Dowdy survey, wildcat 9 miles southwest of Columbus. The well topped a 25-foot sand section in the Wilcox around 9050 feet which showed gas and distillate. The test now is drilling below 9525 feet in sandy shale and is projected to 9750 feet.

The Columbus field is being extended about 3500 feet northeast at Cities Service Oil Company's John Schobal 1, James Tumlinson League. Drilled to 9752 feet with 5½-inch casing set on bottom, operator perforated casing at 8495-99 feet and on a production attempt the well flowed 101 barrels of condensate daily along with an estimated 2,515,000 cubic feet of gas through ¼-inch chokes. Working pressure was 1600 pounds. These perforations have been squeezed and operator will retest around 8200 feet. The first test at 8814-18 feet showed some gas and salt water.

Matagorda County: First oil production is seen for the East Bay City field with Stanolind Oil & Gas Company's E. L. Barth 1 flowing 40.46 barrels of 30.5 gravity oil daily through a 7/64-inch choke from perforations in a new deep sand at 10,424-428 feet. Tubing pressure was 3400 pounds and gas-oil ratio 6975/1. This well is about ½ mile northeast of Skelly-Stanolind & Tide Water Associated Oil Company's Hardy & Horn 1, discovery well which was completed as a gas-distillate well through perforations at 10,095-123 feet.

Madison County: West Production Company and Noranda Oil Company's H. M. Bering 1, Woodbine sand wildcat southwest of Madisonville, is being delayed at 3140 feet for boiler repairs. Operators have surface casing set at 2232 feet. Top of Wilcox sand was around 1490 feet.

Brazoria County: S. A. Brewster & W. O. Bartle's L. H. Wisch 1, wildcat in the Pledger gas area, has set 7-inch casing at 8090 feet with total depth of 9002 feet. Operators will make a series of tests of sands in the Frio which carried shows of oil and gas.

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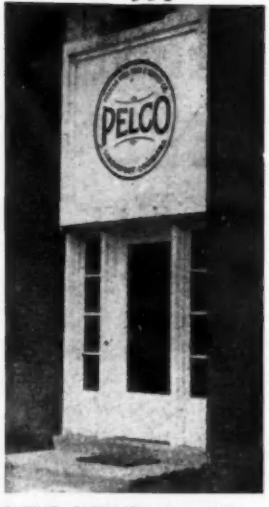

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☆ South Louisiana

Thornwell Field Outpost Flows Gas and Condensate

Outpost well in Thornwell field flows gas and condensate; Amerada enters South Bayou Mallet field; well on southeast side of Charenton pool is testing; Shuteston field well being completed.

Jeff Davis Parish: Cities Service Oil Company's D. J. Benoit 2, 36-11s-5w, is being completed as a northwest outpost in the Thornwell field. Perforated at 9603-25 feet, the well is flowing gas and condensate without gauge. The flow is estimated at 18 barrels of condensate per million cubic feet of gas. Drilled to 9720 feet, operator landed 5½-inch casing at 9717 feet. A drill-stem test at 9638-40 feet also showed some gas and condensate.

Acadia Parish: Amerada Petroleum Corporation is preparing to drill a north outpost test in the recently opened South Bayou Mallet field. Location has been staked for the James Turner 1 in 25-7s-1e. The discovery well is Union Sulphur Company's Mervine Kahn 1, completed in April for 120 barrels of 37.6-gravity oil daily through a 7/64-inch choke from perforations at 9610-14 feet.

Sun Oil Company and Sohio Oil Company's A.R.M. Company 1, 39-9s-1w, on the east side of the Egan field, has completed a fishing job and is drilling below 10,625 feet in shale.

Vermilion Parish: Fohs Oil Company's Grady Lee Humble 5, 28-11s-1w, Gueydan field, has 5½-inch casing set on bottom at 9910 feet for completion in sand topped at 9772 feet.

St. Mary Parish: Fifteen Oil Company's South Coast Corporation 8, 43-14s-10e, southeast side of the Charenton field, is testing after setting production string at 6709 feet.

St. Landry Parish: Sun Oil Company's Guilbeau-Lervergne 2, 37-7s-4e, Shuteston field, perforated at 9517-19 feet and squeezed before making final completion. Total depth is 10,801 feet with 7-inch casing set on bottom.

Assumption Parish: Falcon-Seaboard Drilling Company of Houston has staked a test in the Napoleonville area. It is the Ed Herbert 1 in Sect. 40-12s-13e.

Calcasieu Parish: Sparta Oil Company et al's Industrial Lumber Company 1, wildcat in 25-8s-12w, has set surface casing at 1450 feet and is drilling.

On the south flank of the Edgerly dome, Gulf Refining Company's Louisiana Sulphur Mining Company 2-A, 33-9s-11w, was drilling at 5810 feet in sandy shale.

☆ North Louisiana

Haynesville, Lake St. John, Delhi Fields Are Active

North Louisiana development steady in Delhi, Haynesville, Lake St. John fields; Big Creek and other new areas getting new tests; Madison Parish wildcat misses Tuscaloosa section.

Richland Parish: The Delhi field now

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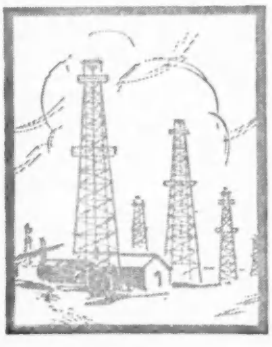

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has 29 flowing oil wells, and a steady development program is continuing. Gulf Refining Company's M. S. Baughman 3, C SW NW 28-17n-9e, the 26th and one of the best producers in the field, gauged 740 barrels of 40-gravity oil per day through 5/16-inch choke on tubing, through 108 perforations from 3342-60 feet in the Tuscaloosa.

Charles Murphy and Sun Oil Company's J. E. Holt 15, 29-17n-9e, farthest southwest drilling well in the field, in coring sand with 40 feet of good section, including a 6-foot shale break from 3250-96 feet, indicated possibility of a new pay zone. Drilling is continuing below 3300 feet to explore other sands in the section before runing completion casing.

Murphy and Sun abandoned J. E. Holt 7, 20-17n-9e, in the northwest sector of the field, at 3560 feet without shows. They will drill J. E. Holt 16, C SE SE 29-17n-9e, to the Holt sand.

Madison Parish: Murphy and Sun's Joe Mahony 1, 10-17n-11e, 12 miles northeast of the Delhi field, is reported to have missed the Tuscaloosa section. A core from 3400-05 feet recovered 1 foot of chalk with a slight show of gas. Paluxy was topped, by core, at 3404 feet and carried salt water. The well is drilling below 3510 feet. Hope is considerably dimmed for production, but another wildcat is scheduled for the area.

Sohio Petroleum Company and Continental Oil Company's Paluxy wildcat Etheridge 1, 3-14n-12e, is building roads.

Lincoln Parish: The California Company is running 7-inch protective casing to total depth of 8868 feet in M. H. Nobles et al 1, 12-19n-4w, Hico area, and is preparing to drill deeper. Indications of gas-distillate production are believed to have been obtained from Cotton Valley sands. An 8-minute drill-stem test from 8717-51 feet is reported to have recovered 1500 feet of water cushion and 30 feet of drilling mud with showing of gas and condensate. A possible commercial showing of gas was reported from the Travis Peak. The test is scheduled to go to 10,500 feet.

The company's Norris 1, 13-18n-1w, second test in the new Tremont area, is fishing at 9310 feet for stuck drill pipe. The well is reported 9 feet lower on structure than the discovery and has logged showings indicating a commercial producer.

Ouachita Parish: California's other tight wildcat, Maxey 1, deep test in 32-18n-1e, is drilling below 7296 feet. Reports say the well has logged good shows in the Travis Peak.

Claiborne Parish: Hunt Oil Company reperforated in the Kilpatrick horizon at 4126-36 feet and 4140-50 feet in W. T. Owens 1, C NE SE 15-23n-7w, and on drill-stem test flowed an estimated 100,000 cubic feet of gas and spray of salt water. These perforations were squeezed but the horizon will be retested. The well is reported to have perforated in the Gloyd horizon and swabbed 58 barrels of 40.3-gravity oil in 16 hours. Plans are to dually complete the well, which will open the East Haynesville field, when production is finally established. The company is rigging up at Birdsong 1, 15-23n-7w, second test in the area, which will seek production to 5500 feet.

Delta Drilling Company and M. J. Houston's Gladney 1, 10-21n-8w, 2 miles northwest of production in the Homer field, has set conductor pipe at 61 feet. The test will go to 7500 feet.

☆ Arkansas

Staking of Lonoke County Wildcat Highlights Activity

Staking of a wildcat was the only highlight in a week of routine drilling. G. D. Howell, Trustee's G. Barnwell 1, 18-3n-9w, in the western part of Lonoke County, 15 miles northeast of Little Rock, will get under way immediately.

Columbia County: Two wells were completed in the Atlanta field by Tide Water Associated Oil Company and Seaboard Oil Company of Delaware. H. G. Reeves 2, C NW NW 17-18s-19w, flowed 48 barrels of 44.7-gravity oil in 9 hours through perforations from the Smackover at 8288-91 feet. Ovie Spain 1, C NW SW 18-18s-19w, flowed 135 barrels of oil and 20 barrels of salt water per 24 hours through 9/32-inch choke through 18 perforations from 8310-12 feet. Gas-oil ratio was 1000/1.

Miller County: Barnsdall Oil Company's W. S. Nichols et al 1, wildcat C NE NW 20-18s-28w, is drilling below 4227 feet. A drill-stem test from 3761-76 feet 11 stands of salt water and 5 stands of mud were recovered.

Sebastian County: Two wildcat tests in this area have gotten under way. Vincent R. Trabucco's E. M. & Bertha Tucker 1, C N½ NW SW 36-5n-31w, is drilling below 810 feet. Arkansas Oklahoma Gas Company's T. O. Blankenship 1, 2-7n-30w, is drilling below 2740 feet.

Union County: H. E. Wasson's Union Saw Mill 1-A, C SW SW NE 8-18s-12w, is reported bailing at the rate of 1 barrel of oil per day, total depth 2364 feet. An oil sand was reported from 2320-24 feet.

R. C. Wallingsford's Union Saw Mill 1, C SE NW NW 13-18s-13w, is at 2312 feet and waiting on cement.

White County: Lion Oil Refining Company's Nalley 1, SE NE 33-8n-7w, is drilling below 4290 feet.

☆ Mississippi

Baxterville Extension Test Has Shows in Massive Sand

The Texas Company's attempted Baxterville extension has successful tests from Massive sands; Cranfield extension flows high quality oil in test; Rankin County reported to have small pumper; another successful completion for Langsdale pool.

Jefferson County: Humble Oil & Refining Company's M. R. Smith 1, SEc 12-9n-1e, only wildcat in the state which has shown evidences of considerable commercial production recently, has tested no new shows in its latest attempts. After perforating with 90 shots at 10,930-40 feet and running tubing to 10,585 feet, a drill-stem test yielded only water. It is now shut in.

Marion County: Texas' L. V. Ladner 1, SEc NE 12-1n-17w, which is undertaking to extend the Baxterville field across the line from Lamar County, has shown good indications of making a commercial producer after good shows from the Massive sand. Casing was perforated at 8756-80 feet and on 3/16-inch top choke and ⅜-inch bottom choke 3224 feet of 16.4-gravity oil was recovered.

Franklin County: Gulf Refining Company's Ella G. Lees 1, NWc 32-7n-1e, east extension of the Cranfield field, Adams County, seems assured of making a commercial producer on the report that it flowed 558.8 barrels of 37.9-gravity oil in a 22½-hour test. Gas-oil ratio was 980/1 and bottom-hole foot pressure 4050 pounds. In a subsequent test at 10,394 feet with production packer at 10,349 feet, the well flowed 73 barrels of 38.8-gravity oil on 3-hour test through ¼-inch choke. Production is from the Massive sand at 10,398-10,410 feet. This new well will extend Cranfield production a mile east.

Rankin County: Leonard Jones' E. P. Rainey 1, SW SE NE 14-5n-1e, is reported pumping about 40 barrels of oil per day along with considerable salt water. Gravity of oil is 14.9, and is understood to be in commercial quantities. The Carter Oil Company's Nelson Estate 1, C SW NE NE 15-4n-5e, has been abandoned at 8004 feet in the Comanchean after no good shows were encountered.

Clarke County: Kirby Petroleum Company's Long Bell Petroleum Company D-1, SW SW NW 30-1n-18e, Langsdale field, has been completed with an initial production on the pump of 100 barrels of oil per day. Gravity of oil is 19 with production from 3 sections of the Eutaw sands between 3672 feet and 3746 feet. Three other Kirby wells are near completion in this field. Long Bell Petroleum Company B-2 and C-3, both in 30-1n-18e, are installing pumps after testing the Eutaw horizon, and Long Bell Petroleum Company D-2, 25-1n-17e, has perforated the section between 3680 feet and 3724 feet and is preparing to install pump. Five wells are now being drilled in the Langsdale area.

Jasper County: Skelly Oil Company's F. K. Lightsey 1, NEc NW NW 19-1n-13e, East Hiedelberg field, has been completed with an initial flow of 121 barrels a day. Production is being developed from a series of perforations of the Eutaw horizon between 4670-5019 feet.

Sinclair-Wyoming Oil Company's Bethea 1, SW NW SW 12-1n-12e, is running electrical log after drilling to 5017 feet. Eutaw was topped at 4805 feet. No shows have been reported.

In the West Heidelberg area Gulf's John Morgan 5, NEc SW SE 34-1n-12e, is installing pump after running tubing to 4966 feet. In a drill-stem test at 5065-70 feet the well swabbed about 50 barrels of oil per day but in subsequent tests the well developed considerable salt water.

Adams County: The California Company's A. M. Ratcliffe, 1, 52-7n-1w, Cranfield pool, has been completed with an initial flow of 122 barrels per day from perforations at 5888 feet. California's Ella G. Lees 4, 29-7n-1w, is drilling below 7637 feet with no shows.

Jeff Davis County: Gulf's A. L. Norwood 1, 28-9n-19w, Gwinville field, is drilling below 8550 feet after encountering moderately porous sands in the 8000-foot zone. Fair gas shows were developed in the Eutaw horizon at 7994-96 feet and gas-condensate from cores at 8101-13 feet. Humble's Denkman Lumber Company 1, C NW SE 27-9n-19w, has recovered oil shows from cores at 8507-22 feet. Previous tests of this zone had developed good shows of gas.

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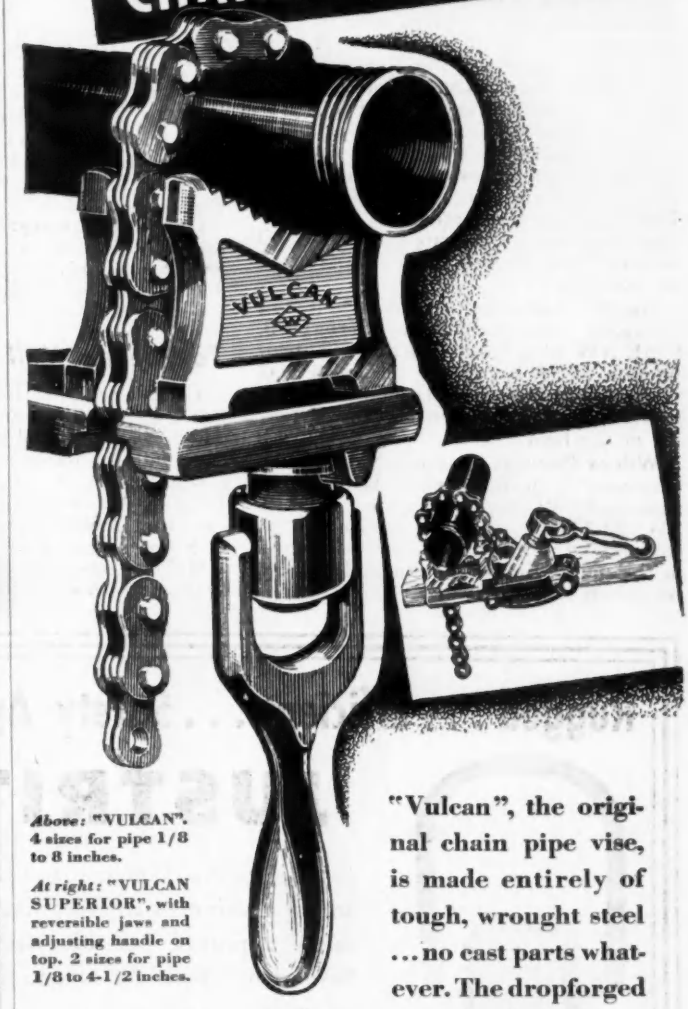

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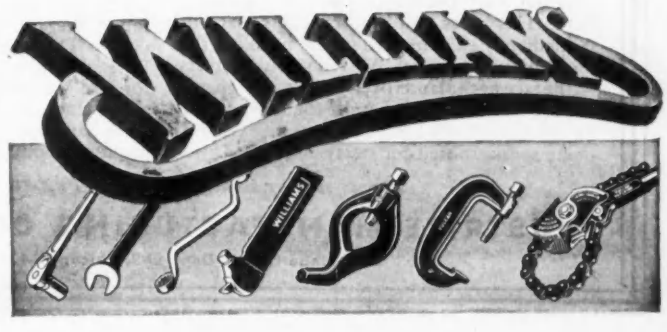

☆ Alabama

Prospective Pool Opener in Choctaw County Is Testing

Prospective pool opener still testing; another producer completed in Gilbertown field.

Choctaw County: The Carter Oil Company is waiting on cement and preparing to make further perforations in Sam Allman 1, NE SW 5-10n-3w, 3 miles south and 1 mile east of the Gilbertown field. A 1-hour drill-stem test of latest perforations in the Eutaw section of 12 shots from 3426-30 feet recovered 120 feet of oil and wash-water and 1580 feet of salt water. Cement is being squeezed behind oil sand to shut off formation water before reperforating. Total depth of well is 3461 feet, with 7-inch casing cemented at 3460 feet. Electrical survey indicated 50 feet of oil bearing format on in the Eutaw, topped at 3337 feet.

In the Gilbertown field, Hunt Oil Company completed Boney Scruggs 3, C SE NW 32-11n-4w, with an initial production of 35 barrels of oil. Well was bottomed at 3568 feet. Hunt has staked location for Boney 4 in section 32-11n-4w of the field.

Wilcox County: Southern Natural Gas Company is drilling below 4410 feet in shale in G. W. Morgan Estate 1, SE SE SW 32-12n-5e, with no indication of commercial production. A drill-stem test in the upper Eutaw section at 1855 feet recovered only salt water.

Walker County: Glen D. Rose Oil & Gas Company's Ulysses 1, C N½ NW SE 6-13s-6w, is drilling below 3410 feet.

Florida

A failure was offset by a new wildcat start in the Florida drilling program. In Calhoun County, The Pure Oil Company abandoned St. Andrews Bay Properties 1, 2-1s-11w, at 3580 feet without shows. The company has staked International Paper Company 1, 25-1s-11w, in the same county and is preparing to spud.

Highlands County: Humble Oil & Refining Company is drilling below 10,415 feet in anhydrite in G. C. Carleton Estate 1, C SW NE 34-38s-29e, deep wildcat test which has had several non-commercial shows of oil and gas.

Collier County: Humble's Gulf Coast Realties 7, C SW NE 17-48s-30e, Sunniland field, completed a fishing job and is now drilling below 6760 feet in chalky lime.

Charlotte County: Humble is fishing for tools in Lownes-Treadwell 1-A, C SW NE 17-42s-23e, at 5572 feet, after drilling plug at 5564 feet.

To Deepen Well

J. A. Park's Hobson 1, C SW NE 9-8n-2w, Washington County, Alabama, which was reported abandoned at 3185 feet, will be deepened to 5500 feet, according to S. A. Hobson, geologist of Jackson, Alabama, who reports shows of gas from 2660-70 feet, and shows of oil in 5 sands from 2750 to 3010 feet.

Hobson also reports resumption of drilling at Wayne Refining Company's Willie Mitchell 1, SEc NW NE 12-8n-3w, same county, which was junked and abandoned at 4432 feet. Drill-stem segment has been sidetracked and drilling will continue below 5000 feeet. According to Hobson, side wall cores indicated saturation in 2 sands, at 1065 and at 3200 feet, and the company will drill another test close by if this should prove unsuccessful.

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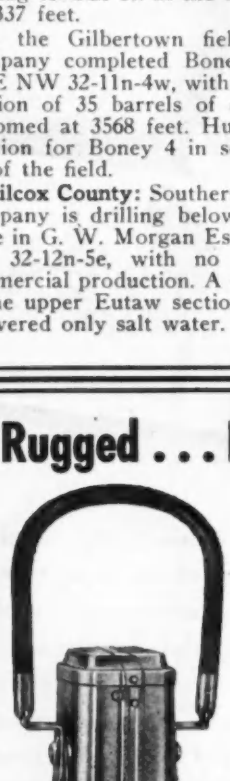

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☆ Illinois Basin

New Area Is Opened in Wayne County, Illinois

New area opened in Wayne County, Illinois; once-abandoned Coles County test is producer; strike registered near Herald pool.

Wayne County: The Texas Company has opened a new area with Bowyer 1, SE SE NW 34-1s-5e, 3 miles southeast of the Coil pool and 6 miles west of the Sims pool, and is now pump-testing McClosky lime. The well initialed 1163 barrels the first day from McClosky lime and pumped 784 barrels daily when placed on pump. Pay was found at 2976-85 feet, the latter figure total depth.

Coles County: Joe Kull and others' Kuehne Manufacturing Company 1, just outside the Mattoon city limits and at the north edge of the Mattoon pool, has been completed for 43 barrels of oil and no water on pump from Cypress sand at 1810-1900 feet and Aux Vases sand at 1965-80 feet. The well was once abandoned.

Gallatin County: Frank King and others' Jones 1, NE C 22-7s-9e, 1½ miles south of the Herald pool, has been completed for 130 barrels of oil and some salt water from Aux Vases sand at 2899-2913 feet. An offset to the discovery has been started by Red Bank Oil Company at Boyd 1, NW SW NW 23-7s-9e.

Indiana

Posey County: The Texas Company has a discovery at Larkin 1, NE NE SW 16-6s-14w, ½ mile east of the Welborn pool. During a drill-stem test, the well made gas in 20 minutes and 2750 feet of oil from pay at 2810-19 feet.

☆ Michigan

Osceola County Receives Traverse Lime Producer

Lupher Drilling Company's Kessinger 1, SE SE NW 5-18n-10w, 3 miles north of the Reed City field, Osceola County, logged Traverse lime at 2942 feet and pay at 2944-45 feet. It showed 1500 feet fluid in 10 hours.

Clare County: Treated with 1000 gallons of acid to a Dundee pay at 4223 feet, The Pure Oil Company's Powell 1, N½ NW SW 7-18n-4w, 3 miles north of the Hatton field, flowed 173 barrels oil but settled to estimated 50 barrels pumping within 3 days.

Arenac County: Lowell Bernhardt's Logas 1, SW NW NW 25-19n-4e, 2½ miles southeast of the Deep River field, under test following acid treatment, recovered a negligible amount of oil on the swab and will be retreated.

☆ California

New Field Is Brought in South of Maricopa Flat

New field brought in by Western Gulf 2 miles south of Maricopa Flat, with discovery well flowing 1200 barrels of 24-gravity oil; Coles Levee outpost well drills into oil sand; successful Seal Beach outpost extends field ½ mile; Imperial Valley wildcat quits at 12,313 feet.

Kern County: Western Gulf Oil Company has discovered a new flush oil field about 2 miles south of Maricopa Flat. Its wildcat, Woodward-U.S.L. 2 in 21-11n-23w, was completed flowing 1200 barrels of 24-gravity clean oil through a ½-inch choke and 192,000 cubic feet of gas. Depth is 2678 feet in shale. Miocene oil sand, equivalent to Stevens, was logged from 2460 to 2672 feet. Richfield Oil Corporation has offset acreage and is preparing to drill Leutholtz 2 in 22-11n-23w. Areal extent of the field is likely to be small in view of the steep dip.

Standard Oil Company of California has Weston 1-7 down 1375 feet in the Cymric area of the McKittrick field, where Union Oil Company recently discovered a new producing sand in 26-29s-21e. Union's second well, Anderson 55-26 in 26-29s-21e, is down about 3600 feet and the company should know soon whether it has a second producer. Its Anderson 45-26 discovery well is bottomed at 3610 feet and is currently producing 465 barrels daily of 33-gravity oil. Standard has foundation in for a second well, No. 34-26 in Sect. 26, and is rigging up Fitzgerald 55 in Sect. 24.

Union's outpost test of the Coles Levee field, Kernco 34-12 in 12-31s-25e, drilled into oil sand at 9844 feet and is presently bottomed at 9976 feet in oil sand with 7-inch casing cemented at 9839 feet.

Los Nietos Producing and Refining Company's wildcat on the South Dome of Kettleman Hills, South Dome 41 in 13-25-19, is drilling below 6150 feet in hard brown shale.

Fresno County: Petrol Corporation has completed Petrol 45-14 in 14-15s-17e, Raisin City field, flowing 400 barrels daily of 26-gravity clean oil.

About 2 miles southeast of production in the Raisin City field, Union is grading location for S. A. & F. L. 38-29, a wildcat test in 15-25s-27e.

Los Angeles County: Shell Oil Company's recent completion of its outpost well, Bryant 3-1, at the northwest end of the Seal Beach field (Alamitos Heights), in 34-4s-12w, extends the Bryant pool ½ mile. Drilled to 10,194 feet, the well is producing 243 barrels daily of 32.6-gravity oil and 125,000 cubic feet of gas. Shell is now grading for Bryant Ranch 1, a new outpost test 3700 feet northwest of Bryant 3-1.

Barnsdall Oil Company has taken over the old Newhall-Potrero Oil Company's Ferguson 1 in 26-4n-17w, which has been idle since April, 1941. The well is about ½ mile northeast of Barnsdall's Rancho San Francisco property and is on a 2400-acre lease which has also passed into Barnsdall's hands. The well will be drilled deeper from present bottom at 8520 feet.

Nothing of interest developed during the past week in half a dozen deep tests

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P-57

in the Los Angeles Basin, all of which are drilling below 10,000 feet and the deepest of which is Shell's Alamitos 48-A now drilling in sand and shale below 13,160 feet.

Imperial County: The Texas Company has decided to pull out of its Imperial Valley wildcat, Grupe-Engebretson 1, 8-16s-16e, near Holtville. The well was drilled to 12,313 feet without encountering anything of interest.

Texas Area Named

The name "South Mineral," Bee County, Texas, has been given to the area presently consisting of three wells completed by H. B. Zachry et al on the Page and Voss tracts. These wells were formerly considered part of the Mineral field.

☆ Rocky Mountain Area

Mizpah Structure, Wyoming, Deep Test Is Failure

Montana deep test is failure; 3 wildcat tests in prospect; Fremont County, Wyoming, test completed as gasser.

Powder River County: Stanolind Oil & Gas Company has abandoned its deep test on the Mizpah structure, Powder River County, Montana. The well, Northern Pacific 1 in SE SW NW 27-2s-50e, was drilled to a total depth of 8991 feet. A drill-stem test at 8760-8805 feet, open 1 hour, recovered 2262 feet of brackish water. Top of the Madison was reached at 7880 feet.

Teton County: General Petroleum Corporation is grading location for a wildcat test on its East Sun River block, 38-3-G in SW SE SW 3-25n-8w.

Wyoming

R. S. Shannon's State 1, SW NW NE 16-33n-91w, on East Muskrat, Fremont County, has been completed as a gas well with an initial capacity of 5 million cubic feet per day through perforations in the third Frontier at 3200-3212 feet. A core taken at 4500-4507 feet recovered 3 feet of sand saturated with dead oil. The well was drilled to 4585 feet.

Colorado

General Petroleum Corporation has released location for 84-15-G, SE SE NE 15-2s-96w, to test the oil possibilites of the Piceance Creek structure, Rio Blanco County, which has produced gas from the Green River formation at around 3000 feet.

Weld County: The Ohio Oil Company and Associated Oil Company will test the Wiggins structure, Weld County, northeastern Colorado, NW SW SW 1-3n-61w. Ohio's block in the area comprises about 47,000 acres, extending into Morgan County.

☆ Canada

Standard of California Stakes Alberta Wildcats

Standard Oil Company of California has started 2 wildcats on the South Alberta Plains, with primary objective Ellis sand depositions down flank from Madison Limestone highs—the type of trap established as an Alberta commercial oil source at the Conrad field, discovered by Standard in July, 1944.

The new wells are Conrad-Province 75-25D, 2½ miles west and ½ mile south of the current Conrad oifield, and on the west flank of the limestone high whose east side yielded the present field; Wrentham-Province 2, 2 miles northeast of the Wrentham-Province 1 (an unsuccessful wildcat which entered another Madison high, with Ellis sand absent), and about 7 miles west of the north end of the current Conrad oilfield.

Phillips Petroleum Company of Oklahoma has taken up Crown Reservations totalling 27,856 acres, covering the "Two Lakes Anticline" located in the extreme north end of the Alberta Foothills Belt, adjoining the British Columbia Boundary 54 miles southwest of the town of Grande Prairie. This is Phillips' first acreage acquisition in the Alaska Highway area, following 2 years of geological work in Northern Alberta and the Peace River block of British Columbia. The company has, however, large holdings in the Sullivan Creek Anticline in the South Alberta Foothills, where 1 wildcat has been completed, and geological work is continuing.

California-Standard has moved ½ mile east of its present line of 3 Devonian Dolomite producers at Princess for a pair of extension wildcats. The wells, to be drilled immediately, are Princess-CPR 18-22A (¼ mile east of No. 58-22A producer and ¼ mile east of No. 38-22A, now drilling close to completion), and Princess-CPR 16-22A, ¼ mile south of No. 18-22A.

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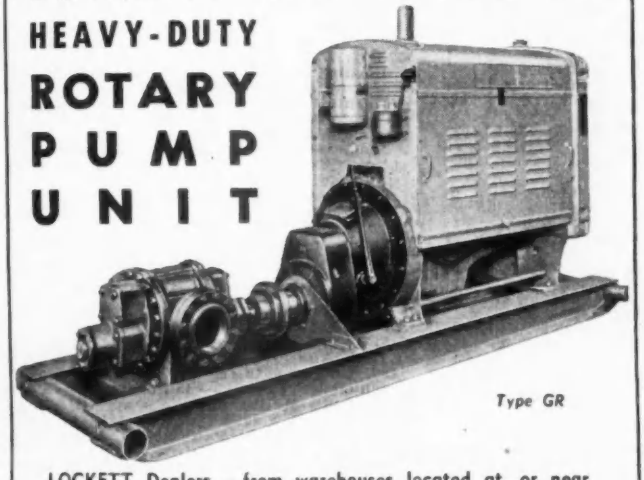

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Fig. A-101

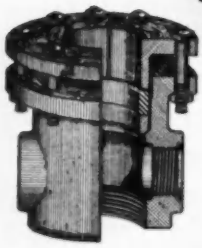

Fig. A-100

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EXPLORATORY COMPLETIONS

CALIFORNIA WILDCATS

Los Angeles County — Failure: Rothschild Oil Co.'s Rohleder 1, 7-2s-11w, Pico area, abnd 1306 ft.

Kern County—Oil Discovery: Western Gulf Oil Co.'s Woodward-U.S.L. 2, 21-11n-23w, Santiago area, flow 1200 bbls 24-gr, 32/64-in, 192,000 gas, tp 300 lbs, cp 400 lbs, td 2678 ft.

Kern County—Failures: Chanslor-Canfield Midway Oil Co.'s Bates 2, 20-25s-19e, Devils Den area, abnd 9181 ft.

Independent Exploration Co.'s Heisen 2, 36-27s-28e, Round Mtn area, Vedder 1133 ft, abnd gray sd 1148 ft.

Miller & York's Theta 1, 12-28s-19e, Antelope Hills area, abnd gray sd 2056 ft.

Norwalk Co.'s 1, 32-31s-23e, Midway-Sunset area, abnd 4127 ft.

Solano County—Failure: Standard of Calif.'s Montezuma Community 1, 20-4n-2e, Rio Vista area, Nortonville 5241 ft, Domengine 5564 ft, Capay 5826 ft, Hamilton 6670 ft, Meganos 7088 ft, Anderson 7345 ft, abnd 7400 ft.

San Luis Obispo County—Failure: Norris Stamping & Mfg. Co.'s Clark 1, 3-27s-13e, Paso Robles area, abnd 3336 ft.

ILLINOIS WILDCATS

Clinton County—Failure: H. M. Miller's Fowler 1, ne ne ne 10-3n-3w, abnd 710 ft.

Edwards County—Failure: C. E. Skiles' Jacobs 1, nw nw nw 5-3s-14w, abnd 3232 ft.

Gallatin County—Failure: S. C. Yingling's Hale 1, nw nw ne 26-7s-9e, abnd 3130 ft.

Hamilton County — Oil Discovery: J. W. Rudy's Marlow 1, nw nw se 29-3s-7e, McClosky 3384-94 ft, pump 25 bbls, td 3430 ft.

Madison County—Failure: Fosterberg Drlg. Co.'s Bassett 1-A, ne ne ne 23-6n-9w, abnd 1500 ft.

Richland County — Oil Discovery: F. A. Bridge's Hill 1, ne sw se 20-2n-14w, Rosi 3101-08 ft, pump 200 bbls, td 3117 ft.

Washington County — Failure: Magnolia's Labuda 1, ne nw ne 18-3s-1w, abnd 1665 ft.

INDIANA WILDCAT

Posey County — Failure: L. E. Bietzman's Juncker 1, nwc 9-6s-12w, abnd 2842 ft.

KANSAS WILDCATS

Barber County—Gas Discovery: Drillers' Gas Co.'s Skinner 1, sw½ nw ne 16-31s-14w, Maquiketa lm 4337-44 ft, flow 20 mln gas, td 4344 ft.

Barton County—Failure: W. H. Hartman's Harris 1, ne se nw 31-19s-12w, Lans 3154 ft, Arb 3396 ft, abnd 3430 ft.

Cowley County — Failure: Ace Gutowsky's Trimper 1, se se ne 11-35s-3e, Miss 3418 ft, Simp 3823 ft, Arb 3848 ft, abnd 3900 ft.

Edwards County—Failure: Superior's Garey 1, nw nw nw 27-25s-18w, Vi 4750 ft, Arb 5027 ft, abnd 5091 ft.

Greenwood County—Failures: E. S. Adkins' Chas. Dater 1, se nw 14-24s-8e, Miss 2550 ft, Lans 1500 ft, Simp 3002 ft, Arb 3069 ft, abnd 3118 ft.

Zappas & McGinnis' Lungwitz 1, se se ne 3-27s-10e, Burgess sd 2135 ft, Miss 2145 ft, abnd 2197 ft.

Sedgwick County—Failures: Helmerich & Payne's Rausch 1, se se nw 14-27s-3w, Miss 3659 ft, Simp Sol 4153 ft, Arb 4262 ft, abnd 4265 ft.

Eldorado Ref. Co.'s Fuller 1, sw sw se 36-29s-2e, Miss 3095 ft, abnd 3472 ft.

Sumner County—Failure: Carter's Webber 1, c nw se 26-31s-4w, Miss 3983 ft, Simp sd 4452 ft, Arb 4557 ft, abnd 4617 ft.

Stafford County—Failure: Plains Exploration Co.'s Bowman 1, sw nw 17-23s-11w, abnd 1578 ft.

KENTUCKY WILDCATS

Hancock County—Failure: C. V. Chapman et al Mrs. White 1, 17-O-34, abnd 452 ft.

Henderson County—Failure: Clarence Woods' Reichert Est. 1, 17-Q-22, abnd 2684 ft.

NORTH LOUISIANA WILDCATS

Concordia Parish—Failure: California Co.'s Applegate 7, 14-9n-10e, test sso and mud 12,765-75 ft, reperf 12,645-46, temp abnd 12,790 ft.

De Soto Parish — Failure: Tom Palmer's Walter Hill 1, c nw se 3-10n-13w, abnd 6558 ft.

Red River Parish—Failure: G. D. Stevens' L. P. Stephens 1, 27-12n-9w, abnd 2005 ft.

SOUTH LOUISIANA WILDCATS

Lafourche Parish — Failure: Calif. Co.'s Delta Farms 2-1, start swc sect 60 go n 1° 00 mins w 4661, th e 4711 to lcn in 60-17s-21e, Cutoff area, abnd 12,469 ft.

Vermilion Parish—Failure: Ohio Oil Co.'s Elie Lelande 1, 1980 s 600 e of nwc 8-11s-3e, Leroy area, abnd 11,968 ft.

MICHIGAN WILDCATS

Clare County — North Hatton Discovery: Pure's Powell 1, n½ sw nw 7-18n-4w, Hatton township, Dundee 4140 ft, pay 4223 ft, acidized 1000 gals, flow est 50 bbls, td 4348 ft, pb 4225 ft.

Huron County — Failure: C. W. Teater's Ignash 2, s½ nw ne 28-18n-13e, abnd 3290 ft.

Montcalm County—Failures: C. E. Weller's Keyt 1, nw nw sw 28-12n-8w, Dundee 3406 ft, abnd 3500 ft.

Barber and Michigan Consol.'s Gyger 1, w½ se nw 1-11n-7w, abnd 1284 ft.

Osceola County — Failure: Taggart Bros. Co.'s Postal 1, c se 5-18n-8w, abnd 1742 ft.

Isabella County—Failure: Rowmor Corp.'s Lea 1, se ne se 7-14n-4w, abnd 1670 ft.

Montcalm County—Failure: Allegan Pipe & Supply Co.'s Greenhoe 1, nw nw se 28-10n-6w, Dundee 3208 ft, abnd 3383 ft.

Sanilac County—Failure: Shell's Burch 1, ne nw se 15-10n-15e, Dundee 1353 ft, Salina 2789 ft, Trenton 5490 ft, abnd 5820 ft.

Van Buren County—Failure: Harris and Fortneys' Todd 1, sw se sw 36-1s-13w, Pine Grove township, Traverse 1274 ft, abnd 1300 ft.

MISSISSIPPI WILDCATS

Leflore County—Failure: Lynn Oil Co.'s J. L. Lundy 1, nec sw 9-17n-1e, Eutaw 4432 ft, Massive sd 5127 ft, abnd 5511 ft.

Rankin County — Failure: Carter's Nelson Estate 1, c sw ne ne 15-14n-5e, Eutaw 6312 ft, Tuscaloosa 6750 ft, Massive sd 7778 ft, abnd 8004 ft.

Washington County—Failure: Lee Rainer's R. N. Aldridge 1, c sw ne 24-16n-7w, Wilcox 1500 ft, Midway 3197 ft, abnd 4020 ft.

Yazoo County—Failure: A. W. Hutchings Drlg. Co.'s L. E. Montgomery 1, ne ne se 34-11n-1w, Eutaw 6179 ft, abnd 7584 ft.

MONTANA WILDCAT

Powder River County—Failure: Stanolind's N. P. 1, se sw nw 27-2s-50e, Mizpah, Madison 7880 ft, abnd 8991 ft.

NORTH CAROLINA WILDCAT

Carteret County—Failure: Floyd L. Karsten's Alice E. and Gordon K. Laughton 1, 350 by 350 out of nec Laughton Farm, Crabb Point, granite 4000 ft, abnd 4044 ft.

OKLAHOMA WILDCATS

Cleveland County — Failure: Smith Bros. Mack 1, sw ne se 24-9n-1e, Earls 5360 ft, Vi 5877 ft, abnd 6222 ft.

Creek County—Failure: Producers Pipe & Supply Co.'s Moore 1, ne se nw 17-15n-9e, Wx 3638 ft, abnd 3656 ft.

Garfield County — Failure: Champlin Ref. Co.'s Hayes 1, se nw nw 31-23n-3w, abnd 5734 ft.

Logan County—Failure: C. L. Carlock's Perdue 1, se se sw 24-19s-4w, abnd 4873 ft.

McIntosh County—Failure: Continental-Day Co.'s Follansbee 1, se se sw 13-9n-13e, Crom 3583 ft, abnd 3654 ft.

Noble County — Failure: Mid-Continent's Malth 1, nw ne ne 25-24n-2w, Misener 4490 ft, Vi 4502 ft, abnd 4527 ft.

Okfuskee County—Failure: C. W. Titus et al's Weltby 1, se se nw 32-12n-8e, abnd 3757 ft.

Seminole County—Failure: Winona Oil Co.'s Bruner 1, nw sw sw 24-10n-7e, abnd 3661 ft.

WEST TEXAS WILDCATS

Floyd County—Failure: Geo. P. Livermore's Alexander 1, 660 out nec of 160-ac tr, sect 345, J. C. Cooper sur, elev 3106 ft, anhy 1020 ft, San Andres 2420 ft, Glorietta-San Angelo 3390 ft, abnd 6510 ft.

Schleicher County — Failure: Geo. Edward Day et al's McBurnett 1, c se sw GH&SA Ry. 11, blk L, elev 2296 ft, Cisco 1820 ft, Adams Branch 4440 ft, Strawn 4950 ft, lime 5325 ft, Ellen 6050 ft, abnd 6373 ft.

Sterling County—Failure: Sunray Oil Corp.'s Glass 1, ne ne nw H&TC Ry. 31, blk 22, elev 2511 ft, Permian 190 ft, anhy 910 ft, li 1840 ft, brown li 2675 ft, abnd 2875 ft.

Yoakum County — Failure: Dunigan Bros. F. T. Brahaney's Watson-Skelly 1, c ne ne sect 422, blk D, J. H. Gibson sur, elev 3707 ft, 1st li 4100 ft, San Andres 4515 ft, abnd 5505 ft.

WEST CENTRAL TEXAS WILDCATS

Comanche County — Failure: Central Texas Gas Co.'s Pettit 1, 3400 wel 3950 nsl L. Pamplin sur A-758, Marble Falls 2704 ft, Ellenburger 3166 ft, abnd 3462 ft.

Shackelford County—Failure: Hickok P. & D. Co.-Harry Reynolds' Davis 1, 2420 snl 660 ewl T&P Ry. 21, blk 12, elev 1925 ft, abnd 1920 ft.

SOUTH CENTRAL TEXAS WILDCATS

Atascosa County — Failure: Gulf's Emma Tartt et al 1, 3125 fr sel 660 fr swl Wilkinson sur, 1476-ac lse, abnd 6632 ft.

Bastrop County—Failure: General Crude's Addie M. Powell 1, 3700 s of m/nly bnd

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Ideal Hook 8",
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■ FOR SALE: No. 2 National with chain driven sandreel and jackshaft $750. Bargain on parts for No. 2 Nationals. Kersey & Company, Artesia, New Mexico.

■ FOR SALE: Four 100 HP 300 WP Lucy rotary boilers, completely reconditioned and guaranteed to pass state or insprance inspection. General Supply Co., 511 E. Atchison St., Pampa, Texas.

■ FOR SALE: Wilson Giant Workover rig with: Full water circulating brake rings, chain transmission, powered with WAKU Waukesha Engine, 7¼ x 12 Emsco pump, powered with WAKU Waukesha Engine, 25½" A.P.I. Emsco rotary. New 4 sheave McKissick traveling block, 6000# test Cameron blow-out preventer complete with three sets of rams. 7 x 12 tool house. All valves and unions 6000# test where necessary. Rig in A-1 condition and complete with hand tools. For servicing wells to 10,000 feet. Available about 10th of August.
R. V. West
Office Ph. Ch. 4-5591
Res. Ph. K 3-5318
Houston, Texas.

■ FOR SALE: 1—Ingersoll-Rand "IMPERIAL" Type XCB Duplex—Belt Driven Air Compressor, 270 CFM Size 10 x 4¼ x 10, maximum pressure 1000 lbs., complete with Inter-Cooler. Address: Stearns Coal and Lumber Company, Stearns, Ky.

WANTED TO BUY

■ WANTED TO BUY: Vertical Askania Magnetometer. Will pay reasonable price. Address: Box 3, c/o The Oil Weekly, Houston, Texas.

HELP WANTED

■ Wanted by a consulting geophysical organization: Petroleum Engineers with Hayward Mud-logging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 45, c/o The Oil Weekly, Houston, Texas.

■ Petroleum Engineer for well servicing company. Address: Box 4, c/o The Oil Weekly, Houston, Texas.

LEASES, DRILLING ACREAGE, ETC.

■ 1000-acre West Central Texas block. Good geology, and subsurface information on shallow and deep wells. Excellent chance for real shallow production in 800 and 1300-foot sands. Well drilled to Ellenburger in 1918 showed for small producer, if acid had been known, chances are that would have made a good well. Will make deal for shallow or deep test. 109-A South 5th Street, Waco, Texas.

■ We have good farm-out deal to let. Ordovician production. Taubert & McKee, Fort Worth, Texas.

OIL PRODUCER

If you have a property that needs reconditioning, or if you have proven or semi-proven leases that need to be drilled on reasonable interest basis, we welcome your inquiries. We are an independent oil producing company, having a complete organization, finances and all necessary power equipment to drill, recondition and operate oil properties. References exchanged. Give full details first letter. All inquiries strictly confidential . . . Address reply to R. P. L. c/o The Oil Weekly, Houston, Texas.

NOTICES

OIL LOANS WANTED

We want good oil loans. We also buy royalties and oil payments.

BAPTIST FOUNDATION
Baptist Bldg. Dallas, Texas

SERVICES

■ To Manufacturers and Distributors. Let us warehouse your stocks, can furnish sales representation also. Warehouses located at Houston, Kilgore and Odessa, Texas, serving Texas, Arkansas, New Mexico, Louisiana and Mississippi. Write, wire or phone. The Brandon Company, Odessa, Texas.

POSITIONS WANTED BY SERVICE MEN

■ In the interest of both employers and employes, **The Oil Weekly**, through its Overseas Pony Edition, which is sent free to 6500 former oil men now in the services, has offered to run advertisements from those who will be seeking work once they are discharged. In some cases **The Oil Weekly** has a few more details but, generally speaking, direct correspondence would be advisable. Unless otherwise indicated it may be some time before the person named in the advertisement is available.

■ Lt. Naval Reserve, 25, Industrial Engineering graduate Penn State, desires postwar position in industrial or automotive sales with oil company or filter manufacturer. Four years' experience in lub and fuel filter design and testing; excellent references. Lt. John R. Cunningham, USNR, U. S. Naval Engineering Experiment Station, Internal Combustion Engine Laboratory, Annapolis, Md.

■ Job wanted as welder helper or roustabout with oil company or contractor; 8 months experience in welding, 9 months experience in well servicing and other roustabout work. Expect discharge within 3 months. Age 23. M/Sgt. James H. Clark, P. O. Box 187, Gladewater, Texas.

Colorado River 1000 w of m/ely bank of river, abnd 3638 ft.

Travis County—Failure: E. R. Marts' C. Jacobson 1, 650 s of s cor Elroy sur 1000 fr nel 330 fr sel 100-ac lse, Harrison sur, Eagleford 1200, Buda 1207, Del Rio 1265, G'Town 1318, Edwards 1380, abnd 1459 ft.

SOUTHWEST TEXAS WILDCATS

Jim Hogg County—Failure: Humble's Mestina O&G Co. 1-D, 3500 e 2500 s of swc Antonio Pena sur, on 132,000-ac lse in J. I. Salinas sur, abnd 10,460 ft.

McMullen County—Failure: Dee Davenport's Annie Graves Dolph et al 2-A, 2970 fr nl 330 fr wl H. Pressler sect 53, 4200-ac lse, abnd 1396 ft.

UPPER TEXAS COAST WILDCATS

Brazoria County—Failures: Salt Dome Oil Corp.-Butcher-Arthur's C. W. Massey 1, 4275 nw fr Manvel field, 330 fr n&el sect 23, HT&B sur, 1430 fr wl 1425 fr sl surm 80-ac tr, abnd 6520 ft.

C. H. Alexander's Blumer Heirs 2, start nwc sect 28 HT&B sur go 2194 e alg nl sur th 553.3 s at ra 330 fr sl 147 fr el 20-ac tr, 490 e of dry hole 1, n of Hastings prod, 2½ mi se Pearland, 40-ac tr, abnd 7702 ft.

Ft. Bend County—Failure: Texas Co.'s Mason Briscoe 1, 330 fr s&wl 250-ac lse, Fulshear area, Joh Foster sur, abnd 8017 ft.

Harris County—Failure: Hatton Tr.'s Jos. F. Meyer, Jr. et al 1, 330 fr n&el 40-ac unit on 460-ac tr, WCRR sur, abnd 4552 ft.

Harris County — Gas - Distillate Discovery: Lenoir M. Josey's Lenoir Josey 1-A, 1250 n 330 w of sec sect 17 H&TC sur, 640-ac lse, Cypress area, 1½ mi n of Joyce Richardson fld, perf 40 shots 6955-65 ft, flow 31 mln gas open, 17.2 bbls cond per mil, ¼-in, tp 2400 lbs, cp 2200 lbs, td 7572 ft.

Jefferson County—Failure: Sun's American Nat. Bank 1, 500 fr wl 285.9-ac tr in BBB&C sur 396 on 100-ac lse, abnd 10,081 ft.

Montgomery County—Failure: Humble's E. L. Bender et al 1, 1064 s 729 e of nec Ettie Finley 100-ac tr, 1521 n of nl Henry Degman 50-ac tr 4875 w 3000 s of swc Timothy O'Neil

POSITIONS WANTED BY SERVICE MEN

■ Seabee with 5 years' experience in pipe line repair and maintenance for Texas companies, other experience in pipe fitting and plumbing for general construction and pipe laying of welded oil and gas lines. Recommendations available. E. A. Norris, SF 2/c, 5th Naval Const. Batt., Co. B-2, c/o F. P. O., San Francisco, Calif.

■ Job with oil company or contractor as roustabout; 9 months experience with deep pump drilling and pump servicing, 8 months experience in boiler firing. References. Expect discharge within 6 months. M/Sgt. Geo. O. Emanuel, Rt. 2, Box 54, Anchorage, Ky.

■ Position wanted with oil well supply store, drilling company, field salesman with specialized supply concern. 2 years as warehouseman with supply company, 3 years as field clerk for drilling company. B. A., married, 32; prospective discharge January 1. M/Sgt. Sherrill F. Campbell, 411 West 115th Street, New York 25, New York.

■ Position wanted with advertising agency as marketing and advertising counselor for oil well supply and petroleum products clients in Houston area. Experience: oilfields, filling stations, refining; college training, 1 year NSAFI. Age 32, married. Pfc Ryman Scott Thomas, 489011, H&S 12th 155 MM Gun Br., c/o FPO San Francisco, Calif.

■ Engineering graduate Texas A&M, 108 points, age 33, 12 years experience in bulk plant, pipeline design, construction, structural design, desires similar postwar design or sales connection. Request from essential industry may expedite release. Major S. E. Woods, O-309968, Headquarters, AF Mid Pac, Office of Engineer, APO 958, c/o Postmaster, San Francisco, Calif.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly
P. O. Box 2608 Houston 1, Texas

sur, in Montgomery sur, 5000-ac lse, sw in Cockfield 6216-23 ft, abnd 10,996 ft.

Tyler County—Failure: General Crude's Mattie Wilson 1, 494 w 900 s of sec MEP&P sur, 1071-ac lse in Elam Cherry sur, abnd 7504 ft.

Washington County—Failure: M. H. Marr's Arnold Lammert 1, start nec Cities Service-Oscar Fulberg lse go n 681.8, th e at ra 639.6 to lcn on 225-ac lse, A. Kuykendall sur, abnd 6042 ft.

Wharton County — Failure: Superior Drlg. Co.'s H. P. Stockton 1, 476 n&w fr sec 40-ac tr, IRR sur, abnd 5915 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: C. M. Burnett et al's Pechacek 1, 1730 wel 3435 snl M. Manning sur A-128, abnd 323 ft.

R. W. Darden et al's Turbeville 1, 1511 wel 1197 snl blk 66, Jefferson CSL sur, abnd 1195 ft.

Wayne King et al's Hale 2, 150 nsl 450 ewl blk 95, Harris sbdn, abnd 1454 ft.

Cooke County—Failure: W. F. Catlett et al's Bezner 1, 437 nsl 330 ewl W. W. Martin sur A-692, Ellenburger 1776 ft, abnd 1834 ft.

Throckmorton County—Failure: Cochran & Cain's Herron 2, 1050 snl 150 ewl sect 1607, TE&L Co. sur, elev 1330 ft, abnd 865 ft.

Wichita County—Failure: Bridwell Oil Co.'s Bridwell 4, 3350 nsl 650 ewl sect 11, AB&M sur A-339, abnd 2053 ft.

Young County—Failures: Bennett & Bennett's Hennig 1, 1716 snl 1050 wel sect 65, TE&L Co. sur, abnd 1108 ft.

C. E. Poole & Son's Howard 1, 541 nsl 225 wel ne¼ sect 1366, TE&L Co. sur, abnd 806 ft.

TEXAS PANHANDLE WILDCAT

Dallam County—Failure: Shamrock O&G Corp.'s Hester 1, nw nw se T&NO Ry. 355, blk 1-T, elev 3774 ft, abnd 3468 ft.

WESTERN CANADA WILDCAT

South Alberta Plains — Princess Failure: Toronto Syndicate's No. 2, lsd 4 6-22-13w4th, abnd 4600 ft.

WILDCAT STARTS

ARKANSAS

Lonoke County: G. D. Howell, Tr.'s G. Barnwell 1, 18-3n-9w, lcn.

CALIFORNIA

Los Angeles County: Pet. Exploration Co.'s Kraft 1, 31-4n-15w, lcn.

Shell's Bryant Ranch 1, 34-4s-12w, lcn.

Orange County: Fred H. Howard's Howard-Isbell Sunset Community 1, 19-5s-11w, lcn.

Kern County: Independent Exploration Co.'s Fee 1, 36-27s-28e, grade.

Richfield Oil Corp.'s Leutholtz 2, 22-11n-23w, lcn.

Rothschild Oil Co.'s K.C.L.-A 83-13, 13-30s-26e, rur.

Utility Oil Assoc.'s Quinn 4A, 15-25s-27e, lcn.

Standard of Calif.'s Weston 1-7, 25-29s-21e, dr.

Fresno County: Union Oil Co.'s S. A. & F. L. 38-29, 29-15s-18e, lcn.

COLORADO

Rio Blanco County: General Pet. Corp.'s 84-15-G, se se ne 15-2s-96w, Piceance Creek, lcn.

Weld County: Ohio-Associated's 1, nw sw sw 1-3n-61w, Wiggins district, lcn.

FLORIDA

Calhoun County: Pure's International Paper Co. 1, nec 25-1s-11w, ru.

ILLINOIS

Clay County: W. C. McBride's Hohlboch 1, ne ne ne 14-3n-7e, lcn.

Fayette County: Nat'l Assoc. Pet. Co.'s Smith 1, nw nw sw 15-6n-3e, lcn.

Hamilton County: Ashland O&R Co.'s Snyder 1, ne se ne 8-5s-7e, dr.

Jasper County: D. E. Schock et al Lancaster 1, se se nw 1-5n-8e, dr.

Jefferson County: Magnolia's Zohn Est. 1, se nw ne 26-4s-4e, dr.

Madison County: Sohio's Huber 1, se se ne 5-4n-6w, dr.

Richland County: Hiawatha O&G's Bennett 1, sw ne sw 10-3n-10e, lcn.

Sam Malis' Funk 1, ne se ne 32-4n-10w, lcn.

Wabash County: Wilson Drlg. Co.'s Cromwell Hrs. 1, se se nw 24-1n-13w, lcn.

Washington County: Inland Oil's Lichtenfels 1, sw sw se 22-1s-3w, lcn.

Wayne County: Texas Co.'s Bowyer 1, se se nw 34-1s-5e, lcn.

KANSAS

Ellis County: D&R Drlg. Co.'s Goble 1, nwc 5-14s-20w, lcn.

Stafford County: J. J. Lynn's Wilson 1, swc 5-25s-14w, rur.

NORTH LOUISIANA

Caddo Parish: Wampler Bros.'s Glassell-North 1, nw ne 26-20n-15w, 4000-ft or Glen Rose test.

De Soto Parish: Kerlyn Oil Co.'s Frost Lbr. Co. 1, c ne sw 7-11n-12w, Pettit test.

Madison Parish: Sohio's W. L. Etheridge 1, 900 n of swc 3-14n-12e, Paluxy test.

Natchitoches Parish: J. H. Liles' Hertzog 1, 110-7n-6w, Wilcox test.

Richland Parish: R. J. Caraway's Bryant 1, c se nw 35-17n-9e, 3500-ft test.

SOUTH LOUISIANA

Terrebonne Parish: Sun's Waller 1, n 36° 12 mins e 4100, n 53° 48 mins w 875 fr sec 38-16s-16e, Cedar Grove area, 11,500-ft test.

MICHIGAN

Allegan County: Harris and Fortney's Miller 1, nw sw nw 2-2n-13w, lcn.

Clinton County: Allegan Pipe & Supply Co.'s Whittaker 1, sw sw ne 22-8n-4w, dr.

Gladwin County: H. E. Bell's State 1, se nw se 36-20n-2e, rig.

Kalamazoo County: Vanco O&G Co.'s De-Right 1, ne ne nw 13-3s-11w, rig.

Kent County: W. S. Cook's Erickson 1, nw nw ne 19-9n-11w, rig.

P. F. Broughton's Austin 1, nw se sw 11-10n-11w, dr.

Mecosta County: Gulf's Gale 1, nw ne ne 3-14n-8w, dr.

Taggart Brothers Co.'s Ladner 1, c se 3-14n-10w, rig.

Midland County: Allegan Pipe & Supply Co.'s Merriman 1, ne se ne 24-13n-2e, rig.

Ashby Drlg. Co.'s Ames 1, sw sw se 36-14n-2e, dr.

Montmorency County: McClanahan Oil Co.'s Kneeland 1, ne ne se 16-30n-3e, lcn.

Newaygo County: E. L. Bourrett's Pletcher 1, nw nw nw 22-14n-14w, rig.

Ottawa County: J. E. Hood's Walcott 1, sw se se 33-5n-14w, rig.

Saginaw County: Sun's Jennings 1, nw nw nw 3-10n-2e, lcn.

MISSISSIPPI

Bolivar County: O. W. Killam's Dattel 1, 118-23n-7w, lcn.

Madison County: Carter's Agnes Anderson 1, nw sw 11-11n-3e, lcn.

Smith County: Gulf's D. C. Grissom 1, ne ne 21-10n-14w, roads.

Wayne County: Woodley Pet.-Premier Oil Refg. Co.'s U.S.A. 1, se sw 28-7n-9w, lcn.

MONTANA

Teton County: General Pet. Corp.'s 38-3-G, sw se sw 3-25n-8w, East Sun River blk, grading lcn.

NEW MEXICO

Lea County: Skelly's State-Mexico 1, c sw nw 20-12s-32e, mim for 4500-ft test.

Van S. Welch et al's State 1, c se ne 31-20s-33e, machine for 3500-ft test.

OKLAHOMA

Comanche County: Ashland O&G's Kline 1, ne ne sw 9-1n-9w, lcn.

Lincoln County: E. K. Carey et al's School 1, 36-16n-6e, mir.

Noble County: Galcon Seaborel Drlg. Co.'s Bar-lo Ranch 1, sw se nw 27-23n-1e, lcn.

Okfuskee County: E. P. Halliburton's Wilson 1, ne sw sw 5-11n-11e, woc.

Seminole County: Big Chief-Vickers' Mathes 1, sw sw nw 24-6n-6e, mir.

WEST TEXAS

Crane County: Gulf's J. Muir 1, c sw sw PSL 23, blk B-27, 1¼ mi nw Sand Hills prod, mim for Ellenburger test.

Crockett County: T. W. Loffland et al's Paul Perner 1, 990 wel 660 nsl sect 43, blk SL, 1100-ft test.

John I. Moore et al's Shannon-Amerada 1, 5637 snl 1130 ewl B&B sect 6, blk FF, outpost 1 mi se Shannon pool disc, 3000-ft cable test.

Garza County: Union Oil Co.'s (Cal.) Post 1-C, 808 snl 6940 ewl sect 29, blk 4, K. Aycock sur, 5 mi ne Post, 3500-ft San Andres test.

WEST CENTRAL TEXAS

Brown County: Mrs. J. L. Lytal et al's L. C. Riordan 1, 2000 snl 1500 ewl C. B. Jennings sur 353, 2500-ft cable test.

SOUTH CENTRAL TEXAS

Bexar County: Geo. Parker-C. L. McCune's J. T. Goad 1, 2200 fr m/wly/sl 330 fr wl 1125-ac lse, 3200-ft test.

Calhoun County: P. R. Rutherford's T. P. Traylor 1, 467 fr sel 467 fr swl 343.8-ac lse, Agaton Sisneros sur, ru.

SOUTHWEST TEXAS

Starr County: J. A. Tarver, R. L. Staggs, Frank Doyno's Chatfield & Doyno 1, 330 fr s&el blk 6, 200.3-ac lse, Porc 80, sh 21, 1400-ft test.

LOWER TEXAS COAST

Bee County: S. Chamberlin's H. C. Wood 1, 467 fr n&el 200-ac lse, J. M. Castillo Gr, 5800-ft test.

Brooks County: Parker & McCune's L. G. Denman 1, 467 fr nwl Palo Blanco crk, 300 fr wl blk 2, J. M. Ynosjosa Gr, sect 78, 1254-ac lse, 5500-ft test.

La Gloria Corp.'s Mary Powers Est. 1, 467 fr s&wl 640-ac lse, GC&SF sur 13, lcn.

Jackson County: Houston Drlg. Corp.'s Adolph H. Miller 1, 330 fr s&wl 1320-ac lse, M. Marquez Gr, lcn.

Wright Drlg. Co.'s C. M. Hasdorff 1, 330 fr s&wl w 80-ac lot 4, J. Rector sur, 6750-ft test.

Wright Drlg. Co.'s Fred Westhoff 1, 330 fr s&wl w 80-ac nw 160 acs lot 6, T. Menefee sur, 7000-ft test.

Victoria County: Hewit & Dougherty's Josephine Mitchell Est 1, 2750 fr nwl 2500 fr sel 2000-ac lse, Placedo Benavides sur, 7500-ft test.

UPPER TEXAS COAST

Brazoria County: Salt Dome Oil Corp.'s T. G. Tripps 1, 330 fr n&el 80-ac lse and lot 16-C of sect 75, 2300 fr wl 330 fr wl HT&B sur and sect 75, 8500-ft test.

Chambers County: Standard of Tex.'s State of Tex. 1, 660 fr sw&sel sect 292 640-ac tr, Galveston Bay, 11,500-ft test.

Ft. Bend County: H. E. Williams' Marion I. Mellon et al 1, start swc 1577-ac lse go 9935 e alg sl 2550 dur n at ra to lcn in Edward Robinson sur, 3 mi nw Lochridge field, 6500-ft test.

Harris County: Traders Oil Co.'s Deepwater Land Co. 1, 2254.3 s of RR 2254.3 fr nl 330 fr el 1900-ac lse, Jas. Seymour sur, 6500-ft test.

Newton County: A. E. Boger et al's C. C. Brown 1, 660 fr n&el s 109-acs of 141-ac lse, Dewey Godfrey-J. Terry sur, 10,000-ft test.

San Jacinto County: John W. Mecom's Central Coal & Coke Co. 1, start sec Shell's H. W. Sawyer lse go s 30° 34 mins e for 1400 and s 59° 26 mins for 700 to lcn in Jas. Robertson sur on 834.8-ac lse, 1 mi s Mercy field, 8700-ft test.

Tyler County: General Crude's G. C. Mettauer 1, start nwc G&BN sur at Neches River, go s alg wl sur 2000 and 200 e at ra, 464-ac tr, 4000-ft test.

Wharton County: Tide Water's Norwood-Clarkson 1, 330 nwly at ra fr Matagorda County line, start swc blk 25 go nely alg sel 2550 th 330 nw at ra to lcn 40-ac tr, Missouri Lincoln Tr. Co. resbdn blk 25, 7500-ft test.

EAST TEXAS

Anderson County: Humble's W. T. Todd 1, 1000 snl 660 ewl of 177-ac tr, 3400 e of m/w/wl 1650 of m/n/sl of David Roberts sur, Boggy Crk fild, mim for Travis Peak test.

Bowie County: T. W. Murray et al's Winnie Fort 1, 300 e 700 n of swc 34-ac tr, or 700 n 1350 e of swc Lemuel Peters sur, 2 mi ne Hooks, dk.

Camp County: B. F. Phillips, Sr.-A. O. Phillips' C. A. Dodson 1, 467 out nwc 98-ac tr, or 467 snl 1600 ewl D. C. Lucas sur, 7 mi sw Pittsburg, rur for Travis Peak test.

NORTH TEXAS

Archer County: Manning & Brown's Mahler 1, 933 n 400 e of nec ATNCL sect 43, but in I. Kornicky sur A-244, 5600-ft test, dr 1360 ft.

Wayne King et al's Hale 3, 450 nsl 1050 ewl blk 95, John W. Harris sbdn, 1500-ft rotary test.

Geo. Proctor et al's Langford Investment Co. 1, 855 snl 330 ewl blk 128, J. W. Harris sbdn, 5000-ft test.

Clay County: Continental's S. A. Donnell 1, 467 out swc sect 65, Freestone CSL sur, 2 mi s Vashti, 7200-ft Ellenburger test.

Wichita County: Bridwell Oil Co.'s Bridwell 5, 150 wel 1100 snl AB&M sur 12, A-809, 2000-ft test, dr 680 ft.

Reno Oil Co.'s V. M. Dale 1, 150 out nwc of tr, Mary Ann Bush sur, A-24, 2000-ft rotary test.

Young County: Kerlyn Oil Co.-Phillips' W. E. Edwards 1, 330 out nec sect 1481, TE&L Co. sur, 5300-ft test.

Lesco's Ray E. Davis 1, 467 out nec w½ sect 63, TE&L Co. sur, 5000-ft Ellenburger test, dr 130 ft.

F. P. Timberlake-H. M. Kelleher's Nellie Prideaux 1, 1350 s 150 e of nec I&GN Ry. sur A-1324, but in A. McMullen sur A-198, 775-ft test.

TEXAS PANHANDLE

Potter County: Addison W. Warner et al's Ruth G. Bush 1, c se se E. L. & R. R. Co. 12, blk 20-F, rur for 4000-ft test.

WESTERN CANADA

South Alberta Plains—Conrad: California-Standard's Conrad-Province 75-25D, se lsd 12 25-5-16w4th, dr.

Wrentham: California-Standard's Wrentham-Province 2, se lsd 16 12-6-17w4th, rigging.

Princess: California - Standard's Princess-CPR 18-22A, ne lsd 16 22-20-12w4th, rigging.

California-Standard's Princess-CPR 16-22A, ne lsd 9 22-20-12w4th, rigging.

SQUEAKS from the BULL WHEEL

The Rotarian

"But, Mom, you said that I should go and get a haircut just like Dad's."

Words and Music

A deckhand who suffered from an impediment in his speech ran to the captain during a storm. "P-please, s-s-s-sir . . .!"

"For goodness sake, hurry up, man," snarled the captain. "If you can't say it, sing it."

"Should auld acquaintance be forgot
"And never brought to mind;
"The first mate's fallen overboard;
"He's half a mile behind."

Lead Kindly Light

"Mose, if you die first I want you to come back and tell me what it's like over there. If I die first, I'll come back and tell you."

"Dat's jes' fine, boss, but eff'n yo' dies fust, please promise me you'll come back in de daytime."

Overdoing It

"Dear God," prayed little Mary as she hurried to Sunday school. "Don't let me be late."

Just then she tripped and fell flat. She got up, dusted herself off, and gave the heavens a scowl. "Well, gee whiz, You didn't have to push, did You?"

No Blue Ribbon Boy

"Does the accused wish to challenge any of the jury?"

"Well, Judge, I think I could lick that little fellow on the end."

Poet's Nook

I drink to you when we're
together;
I drink to you when we're
alone;
I drink to your health so
often
I'm rapidly losing my own.

A GI's Lament

It used to be wine, women and song, but now it's beer, pin-ups and radio.

Democratic

"Doctor," said she, "I need an operation."

"Major?"

"No, Corporal."

His-tory Best

"Son, I'm surprised you won first prize in natural history. I thought it was your weakest subject."

"Well, it was like this. The teacher asked how many legs an ostrich has and I said three."

"But an ostrich has only two legs."

"Yeah, but all the other kids said four."

Gone with the Wind

"If you had your choice, which would you rather be in, a collision or an explosion?"

"A collision. If you's in a collision, dere you is. But if you's in an explosion, where is you?"

This Curious World

A cautious girl is one who buys her boy friend a flashlight so he won't have to feel his way around in a blackout.

"I'm losing my punch," she moaned as she hurried away from the cocktail party.

A boy by the name of "Corn" married a girl named "Cobb." They called their first boy "Nubbin." When their relatives saw him, they exclaimed, "Oh, shucks!"

An old man is a guy who can't take yes for an answer.

The reason the modern girl is such a live wire is because she carries no insulation.

Shooting the Works

A hillbilly and his wife had children every year, sometimes twins and even triplets. They collected quite a brood. Then came the war and the Air Forces on maneuvers dropped paratroopers in the hills. The eldest son saw the troopers floating to earth and yelled:

"Hey, Pa, git your shotgun — that blamed stork is a-bringin' 'em full-growed now!"

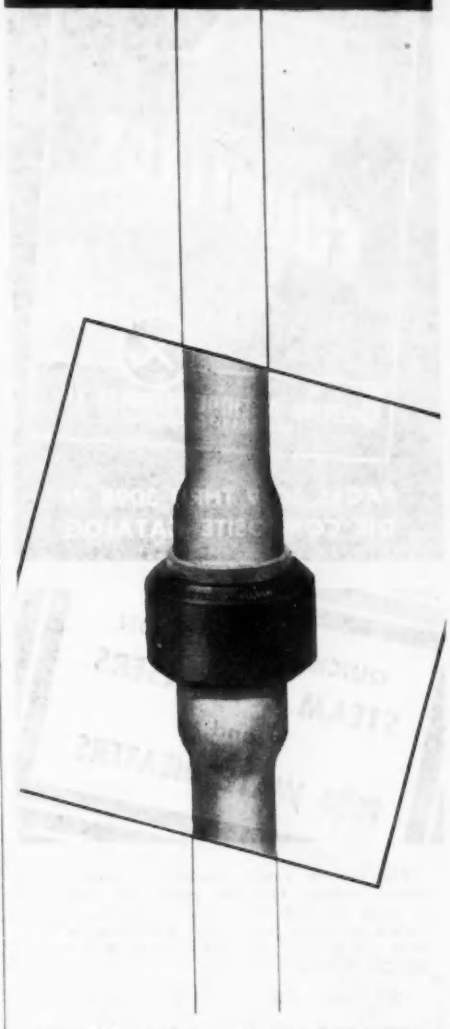
The English Lesson

A navy lieutenant at a South Sea Island station undertook to give an old native a lesson in Basic English. He pointed at a marine and said "Man." The native dutifully repeated, "Man." That gave the volunteer teacher a thrill. He went on and pointed to a palm. "Tree," he announced. The native echoed "Tree." That certainly was progress.

Just then a plane roared overhead. The lieutenant thought he'd give the native the first chance this time, "What?" he asked, pointing upward.

"I'm not sure," said the native, as he stood up and squinted at the plane overhead. "It looks like a PB2Y, but it might be a B-24."

"Best Bet Yet"



Cut Metal-to-Metal Contact

These oil-proof, insulating, wear-resistant, plastic tubing protectors are an integral part of the tubing collar. Made in all sizes, they prevent the metal-to-metal contact that causes many expensive "wet" jobs in pumping wells. Without this contact, the collars do not wear holes in the casing.

See Composite Catalog

Patterson-Ballagh TUBING PROTECTOR

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PAGES 3079 THRU 3098 IN THE COMPOSITE CATALOG

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MEN IN THE INDUSTRY NEWS

Rudolf Lucovnik, representative of the Jugoslav government making an inspection of American oil properties, was in Houston last week, accompanied by **Srecko Kajfez** of Clare, Michigan, sales representative of Cardwell Manufacturing Company, Inc.

John Murrell of DeGolyer & McNaughton, Dallas, spoke before the Houston Chapter of Nomads August 6 on production and reserves of the Middle East. His talk was illustrated with slides and motion pictures. A large number of guests, including **Shep Miers,** president of the Tulsa Chapter of Nomads, was present. Murrell was a member of the U. S. Oil Mission which last year inspected areas of Iran, Iraq, Kuwait, Bahrein and Saudi Arabia.

R. L. Young, pipe line superintendent for Central Pipe Line Company, has resigned to engage in general construction work with headquarters at Centralia, Illinois.

Fred Graham has joined **C. W. Schneider,** well-servicing firm at Oklahoma City, following his resignation as production superintendent for the Farm Bureau Oil Company at Mt. Vernon, Indiana.

L. T. Huston, geologist, has resigned from Cherry & Kidd, Inc., and has joined Ashland Oil & Refining Company at Evansville, Indiana.

Sidney Schafer has opened offices as a consulting geophysicist specializing in seismic and gravity supervision, review and interpretation, in the Mellie Esperson Building, Houston.

A. F. Blankenship has been named drilling superintendent and assistant to **A. P. Proctor,** division production superintendent for Magnolia Petroleum Company in Oklahoma and parts of North Texas. He formerly was drilling superintendent for Magnolia in the West Texas area.

Rene Berg, president of American Premaberg Company, New York, has been on an inspection trip through the Mid-Continent and Gulf Coast districts. He plans to reestablish his export service to France and other European oil countries as soon as possible. He was with the French Army when Germany overran France, but managed to escape to this country. His company manufactures tank accessories and other items for pipe line and storage operations.

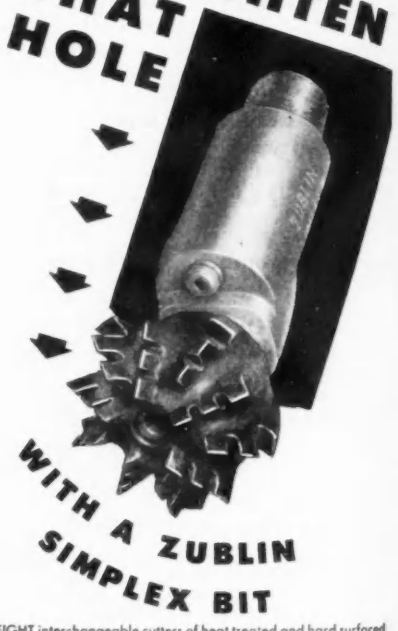
Rene Berg

Ben E. Thompson, geologist and engineer with 26 years of service with the Gulf Oil Corporation, has been promoted to superintendent in the production department of the Fort Worth division, succeeding **M. O. Boring,** who has been assigned other duties. **Gordon H. Fisher,** geologist and engineer, becomes chief production engineer, with supervision over all production engineering personnel and proration matters. **T. W. Rhoads,** former chief engineer, will continue as assistant superintendent of production, and will have supervision of natural gasoline plants and natural gas operations. These changes were announced by **F. J. Adams,** general agent for the Fort Worth division, to become effective September 1.

Carl F. Barnhart, Permian Basin assistant district geologist for the Amerada Petroleum Corporation with headquarters at Midland, Texas, the past nine years, has been placed in charge of the district, succeeding **Warren D. Anderson,** who resigned to engage in consulting work at Midland.

W. L. Woolley, geologist for the Mid-Continent Petroleum Corporation, has been transferred from Tulsa headquarters to Midland, Texas, to take charge of the company's West Texas-New Mexico district.

STRAIGHTEN THAT HOLE



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R. E. Heithecker, formerly senior petroleum engineer, Bureau of Mines, Bartlesville, Oklahoma, heads the gas utilization department of the Mid-Continent Division, Seaboard Oil Company of Delaware, Dallas.

Heithecker joined the Bureau of Mines as a petroleum engineer in 1926 and had various assignments in Laramie, Wyoming; Carlsbad, New Mexico; Shreveport, Louisiana, and Bartlesville, Oklahoma. For the past six years he was head of the section at Bartlesville dealing with primary oil and gas production problems. He is the author of several Bureau of Mines publications.

Kenneth W. Davis, head of Mid-Continent Supply Company, Fort Worth, has contributed $50,000 toward a treatment unit at the Gonzales Warm Springs foundation for the city's poliomyelitis victims, on condition that Fort Worth citizens contribute the remainder of the money needed.

H. Carl Wolf will become managing director of the American Gas Association on October 1. He will succeed **Alexander Forward,** managing director since 1923, who is retiring from active business. Headquarters of the association is in New York City.

Wolf was elected president of the Atlanta Gas Light Company in 1938, and until recently served as president of the Mobile Gas Service Corporation and Florida Public Utilities Company. He has been a director of the American Gas Association since 1941, and in 1942 was appointed chairman of the association's national advertising committee.

R. L. Beckelhymer has resigned as head geologist in the Houston office of Union Producing Company to enter business as a consulting geologist. He has opened offices in the Mellie Esperson Building, Houston.

Eugene C. Anderson, formerly with International Minerals and Chemical Corporation at Carlsbad, has been named director of the New Mexico Bureau of Mines and Mineral Resources, succeeding **A. D. Hahn,** resigned. Anderson was chief engineer of the Pecos River mine of the American Metals Company for 12 years and was then chief engineer at the Carlsbad potash properties of the International Minerals and Chemical Corporation. He goes to Socorro from Drummond, Montana, where he was manager of International's phosphate division.

Reese H. Taylor, president of Union Oil Company; **George J. O'Brien,** vice president of Standard Oil Company of California; and **Don E. Gilman,** executive vice president of Western Oil and Gas Association, were speakers on the radio forum of a Los Angeles bank, discussing the subject, "California Petroleum in War and Peace."

J. E. Gesner recently rejoined Reliance Regulator Corporation, division of American Meter Company, as engineer. His experience includes 15 years with Pacific Gas and Electric Company, where he started in the East Bay Division. He was advanced to the Colgate division as measurement inspector and later industrial gas engineer of the general sales department.

J. E. Gesner

J. R. Deaver, formerly with Oil Well Supply Company, is now associated with Brewster-Bartle Drilling Company, Houston.

Dean A. McGee, vice president of Kerlyn Oil Company, and **Del Howard,** production engineer for Cities Service Gas Company, have been appointed chairman and vice chairman, respectively, of a committee to assemble evidence and testimony to be presented at the FPC investigation on the gas industry in Oklahoma City in October. The appointments were announced by **Gov. Robert Kerr** of Oklahoma.

Lieut. (jg) Paul K. Bunke, on leave of absence from The Texas Company, has received a commendation from the Navy for taking his craft alongside a torpedoed ship in the Atlantic and rescuing 65 men. Before joining the Navy Lieut. Bunke was stationed at Salem, Illinois.

Deaths

Curtis C. Webb, Los Angeles consulting engineer, died August 1 of burns suffered in an explosion at an oil plant near Oxnard, California. Webb is survived by his mother and a brother, **Torrey H. Webb,** vice president of The Texas Company, both of Los Angeles.

Joseph H. Rounsavell, 45, treasurer of Signal Oil & Gas Company, Los Angeles, was found dead of carbon monoxide poisoning in his automobile in the garage of his home in Beverly Hills, California, August 3. Born in Lowell, Kansas, and a graduate of St. Louis University, Rounsavell came to California in 1923 and joined the Signal Oil & Gas Company three years later as treasurer and director.

O. M. Davis, 74, retired independent oil operator of Houston, died August 2.

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BOOK REVIEW

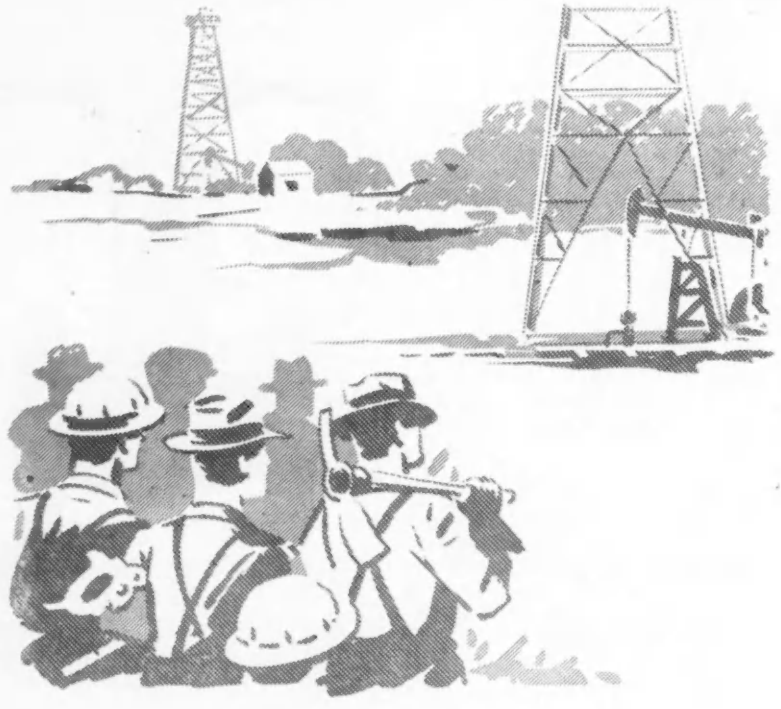
Colorado Stratigraphy

The Colorado School of Mines, Department of Publications, Golden, Colorado, announces the July number of the Quarterly under the title of "A Résumé of the Paleozoic Stratigraphy of Colorado." The author is Dr. J. Harlan Johnson, associate professor of geology at the School of Mines.

This number reports on the older sedimentary formations of the state, now attracting much attention from oil men because it is in these formations that oil and gas occur in the Rangely and other fields, now under active development. There are also promising possibilities that these formations will produce commercially important quantities of oil in other sections of the state.

Furthermore, it is in these formations that some of the most prolific ore deposits are found in the mountainous sections of the states.

Photographs, diagrams, geologic sections, tables, and an extensive bibliography add to the publication's value and utility. It may be obtained from the department of publications, Colorado School of Mines at $2 a copy.



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Pamphlets Worth Reading

Research — an Irresistible Force, a talk by Dr. Howard E. Fritz, Director of Research, The B. F. Goodrich Company, Akron, Ohio.

Some Aspects of the Proposed Guaranteed Wage, address by Irving S. Olds, chairman of the Board of Directors, United States Steel Corporation, 71 Broadway, New York 6.

Prices, Profits and Production, how to block inflation with productive jobs, by Charles S. Davis, president, Borg-Warner Corporation. Distributed by the National Association of Manufacturers, 14 West 49th Street, New York 20.

Cartels Threaten Economic Progress, by J. Howard Pew, president of Sun Oil Company, 1608 Walnut Street, Philadelphia 3.

A Guaranteed Annual Wage for Labor, by Benjamin F. Fairless, president United States Steel Corporation, 71 Broadway, New York 6.

A Crusade to Restore the Public Domain, by Walter Metzenbaum, 668 Post Street, San Francisco 9.

A Series of Statements on the American System of Free Enterprise, by G. A. Eastwood, president Armour and Company, Chicago.

Can Government Guarantee Full Employment? Bulletin No. 13, Chamber of Commerce of the United States of America, Washington, D. C.

The A.B.C. of C.E.D. (Committee for Economic Development), Houston Chamber of Commerce, Houston.

The History and Accomplishment of Twenty-Five Years of Federal Aid for Highways, American Association of State Highway Officials, Washington, D. C.

Opportunity in Retail Trade for Servicemen, Dun & Bradstreet, 290 Broadway, New York 8.

The Road to Tokyo and Beyond, Third Report to the President, The Senate and the House of Representatives by the director of War Mobilization and Reconversion, Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

The Businessman's Bureau, Economic Series No. 40, by Corrie Cloyes, Division of Commercial & Economic Information, United States Government Printing Office, Washington, D. C.

American Cooperatives, Yesterday—Today—Tomorrow, by John Daniels, the New Leader Publishing Association, 7 East 15th Street, New York 3.

Collective Bargaining, by John W. Scoville, Newspaper Statistical Service, Lafayette Building, Detroit 26.

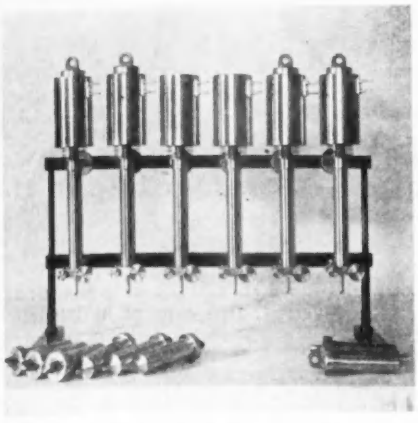
Price Control, Costs and Business Profits, and **The Story of Wartime Rationing,** Office of Price Administration, Chester Bowles, Administrator, Washington, D. C.

State of Texas Veterans' Program, Veterans' Personnel Division, State Selective Service Headquarters, Austin 17.

Safety Training Digest, Industrial Rehabilitation, Timely Articles on Present Practices, The American Museum of Safety and the Center for Safety Education, New York University, New York.

1—Distilling Unit

Ruska Instrument Corporation, Houston, announces the Ruska Fluid Content Still, an electrically heated distilling unit



with removable retorts, designed for use in determining the fluid content of oil field cores.

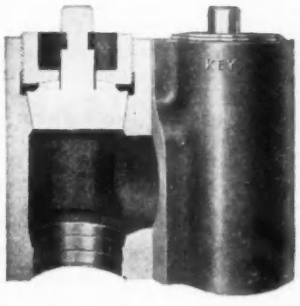
When the retort is heated, the hydrocarbons and water of the core are evaporated and escape through the condenser tube. They are cooled and liquefied and may be collected in any receptacle that suits the operator's purpose.

A full recovery of the fluid of the core is obtained by regulating the flow of the water through the condenser.

The still can be operated continuously. Cores can be changed without removing the heating system and without waiting for the unit to cool. Stands can be furnished to support the stills in the laboratory.

2—Return Bend Fitting

Key Company, East St. Louis, Illinois, announces the new improved Key 7000 Type return bend fitting which, with special bull nut and plug pulling device, permits the plug to be freed from the



body while the nut remains firmly held by the engaging threads, localizing flash within the bend and protecting workmen. A double cone thrust ring equalizes pressure from the bull nut over the entire bearing surface of the plug, and aids in guiding the plug to even bearing across the face of the seat. The crossover port is reinforced to give uniform stress distribution and to provide maximum corrosion allowance at points where wastage is most prevalent.

3—Draw Works

Cardwell Manufacturing Company, Inc., Wichita, Kansas, is offering Model O, heavy-duty draw works for deep drilling. The outfit has 450 horsepower input and is recommended for drilling to 8000 feet with 4½-inch drill pipe, or for workover jobs up to 15,000 feet.

Manually controlled twin disc friction clutches drive the pump, draw works, and rotary table.

Either or both engines may be used to drive the draw works, rotary table, or pump. Engines are fully synchronized and quickly adjustable from driller's position, with all other controls within easy reach.

Cardwell chain transmission has three speeds forward and one reverse. Pumped oil lubrication is provided to all chains and bearings with oil pressure gauge in front of the driller. Dual drum drives provide six speeds forward and two reverse to the lower drum, with all hoisting speeds instantly available.

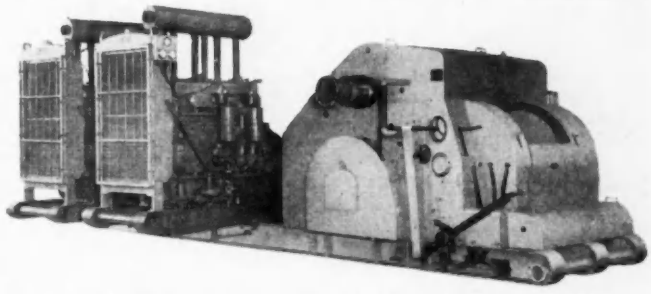
When rotating, no drives are running except to the rotary table, although catheads or drum may be engaged without stopping rotary table or slush pump.

Rotary table operates from transmission with three speeds forward and one reverse, through a twin disc friction clutch with automatic brake to quickly stop rotation of table. Rotary table speeds range from 70 to 220 revolutions per minute. Rathole drive sprocket is built into the draw works.

Hydromatic brake is available for installation on the lower drum shaft. Single adjustment, fully equalized braking system is available with either circulating water or spray cooling system. Braking system without hydromatic brake will hold 6500 feet of 4½-inch drill pipe with six lines up.

Draw works may be moved over highway without special permit, by removing engines and catheads. It is not necessary to remove bearings to take off the V-belt engine drives.

Frame with three structural members



running full length gives maximum strength and rigidity.

All wearing parts including brake flanges are heat treated. All sprockets are of cut steel and specially hardened. Optional sand line drum assembly mounts on countershaft, making a double drum draw works. All gasoline engines are standard with fireproofing and water circulated exhaust spark arrester.

4—Silicon Rubber

Dow Corning Corporation, Midland, Michigan, is offering Silastic, a silicon rubber, produced for molding, extruding, coating, and laminating.

Largely because of their inorganic origins, these rubbery organo-silicon oxide polymers remain elastic after heating at temperatures up to 500° F. and retain flexibility at temperatures as low as —70° F.

Stocks are available for molding flat sheets, gaskets and other shapes. Coated lead wire and other continuous extruded shapes are made from stocks designed for extruding.

Also available are stocks compounded for coating glass or asbestos cloth to produce flexible, water-proof, heat stable, oil resistant gaskets, diaphragms, tape and electrical insulation which is

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Please have manufacturers send me, without obligation, more information on items shown in August 13 issue of The Oil Weekly as checked below:

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In addition to information checked above, I would like more data on products or services advertised elsewhere in this issue by_____ Company

Name_____ Title_____

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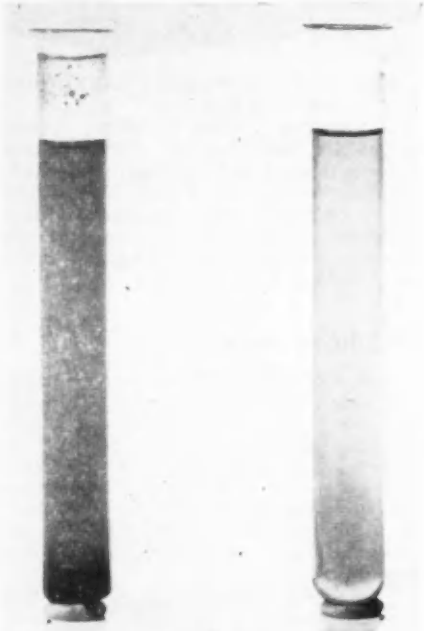
(To avoid delay print or type clearly name, company and mailing address)

nontracking, arc and oxidation resistant. Laminates may be made by curing under pressure multiple layers of Silastic coated inorganic fabrics. Silastic is also used to insulate wire wound resistors with waterproof, heat resistant, elastic coatings able to withstand the severe and repeated thermal shocks specified for Grade I Class I resistors.

The coatings adhere to glass, vitreous enamel, iron, steel and aluminum. They constitute protective coatings which are resistant to oil and salt brines at elevated temperatures.

5—Induco Fluid



By the addition of "Induco Fluid," a development of Industrial Chemical Company, Los Angeles, the dirt, sludge and gums in diesel fuel oil (left) are converted to combustible hydrocarbons, and placed in suspension (right). Engine efficiency is increased, smoking and hard carbon deposits eliminated.

Industrial Chemical Company, Los Angeles, has perfected "Induco Fluid" which, it is claimed, when added to Diesel fuel oil, chemically converts sludge, gums and resins into usable hydro-carbon elements.

Through the use of the fluid, the undesirable materials are placed into suspension in the fuel oil and consumed in combustion as usable British thermal units, increasing combustion efficiency and raising the power output of the engine. Also by the removal of sludge and lamp black from the fuel oil, smoking and the formation of carbon is eliminated.

6—Heat-Resisting Rubber

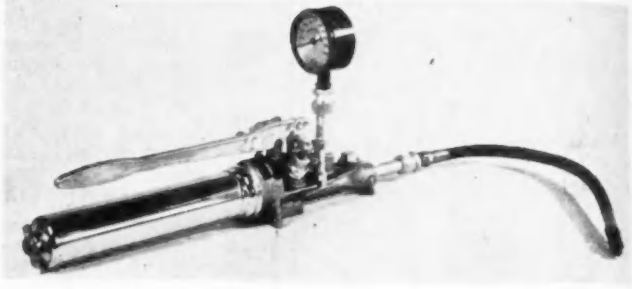
United States Rubber Company, New York, New York, has perfected a synthetic rubber hose which offers increased resistance to heat and pressure. The hose is designed to withstand temperatures up to 250° F. for use in oil lines and up to 300° F. for installation in cooling systems.

It is claimed that resistance to pressure is doubled in the hose.

A principal feature of construction is a high-strength carcass built with Ustex, a chemically-treated cotton yarn which has increased strength due to the treating procedure.

7—Pressure Gauge Tester

Mansfield & Green, Cleveland, announces a multi-purpose pressure gauge tester, combining for the first time, it is said, in a single unit a pressure gauge tester that can be used with equal facility for bench and portable testing.



On bench testing, the unit can be used with test gauges or with a dead weight attachment. A doubly sealed check valve eliminates leakage and loss of pressure whether using oil or water, and for pressures up to 10,000 pounds per square inch.

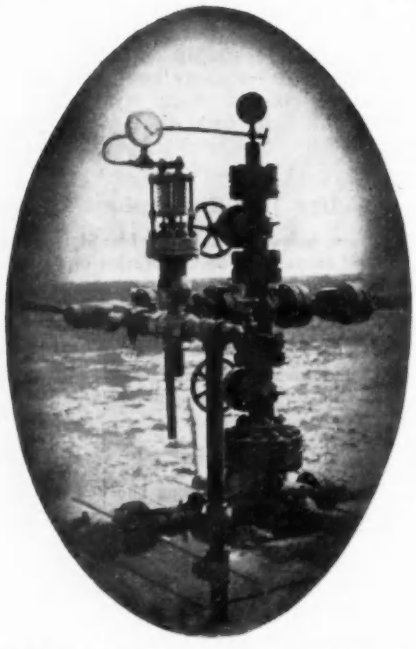
Principal uses of the testing unit include testing and repairing of all types of pressure gauges and instruments, the setting of relief or other pressure-actuated valves, and general hydrostatic testing.

8—Regulator

Wilson Supply Company, Houston, is marketing the Nixon regulator, a device designed to increase the flowing life of wells and eliminate swabbing jobs.

On a weak flowing well being produced through a small choke, the regulator is installed in the opposite wing from the choke, with a large choke below the regulator.

When the tubing pressure drops, due to water accumulation in the tubing, the regulator opens and produces the well through the large purging choke. This clears the tubing of water. When the tubing pressure rises to the desired point, the regulator closes, switching production back through the regular small production choke.



Use the Coupon

For free copies of Manufacturers' Literature or more information on products described on these pages, use the convenient mailing coupon on page 101.

Literature

9—Synthetic Rubber

Hycar Chemical Company, Akron, Ohio, has published a 20-page illustrated bulletin, "Everywhere in Industry," describing special purpose synthetic rubber and its use.

The first part of the booklet is devoted to a pictorial résumé with a discussion of the process by which these special purpose synthetic rubbers are manufactured, the characteristics of the crude polymers, the company's engineering services and other points of general interest.

The latter part of the bulletin covers the properties and applications of vulcanized compounds of the three types of Hycar now available—Hycar OR-15, OR-25 and OS-10—beginning with a center-spread table giving the complete range of properties, along with detailed explanatory notes.

10—Switchgear

Allis-Chalmers Manufacturing Company, Milwaukee, has issued a four-page bulletin on metal-enclosed dead front switchgear for low voltage distribution circuits.

Pantograph drawout construction of breaker elements is featured. Permitting easy inspection, removal, and replacement of each air circuit breaker without disconnecting any other circuit, this construction supports each breaker on a

framework which in turn is mounted on a simple pantograph.

Outdoor low voltage switchgear enclosed in a weatherproof housing is also discussed.

Space requirements of Allis-Chalmers low voltage indoor and outdoor switchgear in various panel types, electrically and manually operated, are presented in a complete table, including rating, type of construction, and dimensions.

11—Portable Drilling Machines

The National Supply Company, Toledo, Ohio, has published Bulletin 314 on National portable drilling machines. These machines are made to cover the range of cable tool drilling from medium to the heaviest depth requirements. Each size is described in detail and illustrated. Detailed specifications are also included for each unit.

12—Dynamometer

W. C. Dillon & Company, Chicago, has published a dynamometer manual which presents the story of the traction type dynamometer and the increasing uses being found for it. The instrument simplifies testing and weighing procedures in practically every industry.

13—Oxygen

Air Reduction Sales Company, New York, has published a 24-page, two-color booklet, "Oxygen—Indispensable Servant of Industry," telling the story about oxygen, how it is made and how it is used in industry.

14—Rotary Pumps

Blackmer Pump Company, Grand Rapids, Michigan, has published Folder 102 on rotary pumps for the petroleum industry. The bulletin shows various types pumps, discusses their application and gives specifications.

15—Chemical Melamine

American Cyanamid Company, New York, has issued a 24-page booklet describing the many applications of the Chemical melamine. The booklet is designed for popular appeal and supplements the numerous technical publications relating to the various applications of melamine and the chemical compounds in which it is used.

Larkin Names Distributor

Howard Supply Company, Los Angeles, California, has been appointed distributor for Larkin Packer Company. Larkin float equipment and tubing heads will be carried in Howard's Los Angeles warehouse, and a representative stock in each of the distributor's nine field stores.

Office Moved

Arkansas Western Gas Company announces removal of its general offices from 1104 Burt Building, Dallas 1, Texas, to 40 East Center Street, Fayetteville, Arkansas.

Continental Supply Names Exports Division Officials

R. M. Dinges has been elected vice president in charge of exports for Continental Supply Company, with headquarters in New York, succeeding Fred L. Convers, recently resigned. Charles J. DeLay will be manager of the exports division.

R. M. Dinges

Charles J. DeLay

Dinges joined the company in 1923, in Kansas. He was loaned to PAW in 1942 and served as district director of materials until this year.

DeLay became associated with the company at Wichita Falls, Texas, in 1919. Two years later he was transferred to the New York office, where he has since been engaged in export work.

Convers joined the company in 1920, and after a period with Emsco in New York, returned to Continental Supply Company, in 1929, in charge of exports. He has held that position since.

Fire-Damaged Seismograph Firm Continues Operations

Although the Seismograph Service Corporation, with headquarters in Tulsa, suffered the loss of a garage with six automotive units recently in a fire, services of the company were not impaired and there will be no break in operations. No loss of production facilities was involved and the flow of equipment and supplies was not affected by the fire, G. H. Westby, president of the company, pointed out.

"Within the year a suitable building large enough to take care of our company's expansion will be completed to house satisfactorily all facilities except the main office in the Kennedy Building," Westby said. "The temporary loss of this small facility will have as its major result the acceleration of development of the above larger and finer facilities."

Southern Geophysical Company Opens Fort Worth Offices

Dr. Sidon Harris, president, has announced the opening of home offices of Southern Geophysical Company, Inc., in the Sinclair Building, Fort Worth.

Dr. Harris formerly was seismograph supervisor of the North Texas-New Mexico Division for Stanolind Oil & Gas Company. In addition to ten years with Stanolind, he was also associated with the Humble Oil & Refining Company in Houston.

Paul H. Ledyard, formerly associated with Stanolind Oil & Gas Company, has been named seismograph supervisor for Southern Geophysical Company.

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Again
AVAILABLE
HYDRAULIC PUMP

The Vicker's Hydraulic Pump that so successfully produced problem wells in the past, is now again at the service of the oil industry. Rather than make a pump from inferior materials, manufacture of the Hydraulic Pump was discontinued shortly after Pearl Harbor due to the shortage of critical alloy steels from which it had been made.

If sand or other production problems bother your pumping wells, contact HOMCO—exclusive mid-continent distributor for the Hydraulic Pump.

Also available again to discuss your pumping problems is HOMCO'S "Cat" Watson—whose many years of service to the production man brought him a vast experience and a great many friends in all producing areas.

Photograph of Hydraulic Pump model with cut-away sections showing hold-down, valves, by-pass arrangement, pump rod and releasing device.

for PRODUCTION EQUIPMENT CONSULT:

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HOUSTON, TEXAS

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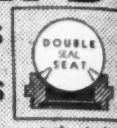

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